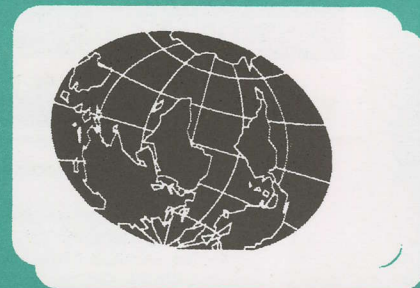


Bob Cooper's

February 15 2006

SatFACTS

MONTHLY



Reporting on "The World" of satellite television in the Pacific and Asia

IN THIS ISSUE

**The ISDN versus
VoIP Worlds
and Satellite**

**Optus upgrading
Aurora cards:
Hackers Beware!**

**Rebuilding 5m
fibreglass dishes
in Pago Pago**

- ✓ Latest Programmer
News
- ✓ Latest Hardware News
- ✓ AMC23 is at 172E
- ✓ Observer Reports

Vol. 12 ♦ No. 138

Price Per Copy:

NZ\$10/A\$11/US\$/Euro8



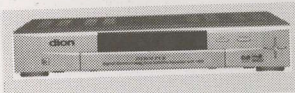
Hualin Pty Ltd

Satellite Equipment Specialists
Import and wholesale

Unit 51/159 Arthur ST Homebush West, Sydney Australia 2140
Phone: (02) 9763 1366 Fax: (02) 9763 1356
Email: sales@hualin.com.au Web: www.hualin.com.au

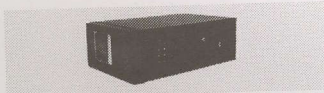
For all prices, product information and banking details please visit the website or phone us.
Specials this month

DT800PVR - Digital Receiver



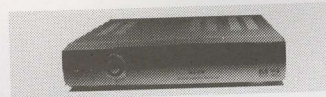
- 40Gb HDD = 40hr Record time
- 2x CI CAM Slots
- DiSEqC 1.2
- **Fibre Optic Output Capability**
- Price: \$390 AUD + GST

Satlook - Signal Meter



- Digital, Analogue and combined versions available
- A must for the professional
- Simple menus and functions
- Price: Phone up for Quote

DreamMAX - DT470



- Irdeto embedded
- 4900 Channel Memory
- DiSEqC 1.2
- User Friendly
- Price: \$200 AUD + GST

Everything? Yeah we got

LNBF

- Zinwell C Band
- Zinwell KU Band
- MTI C Band, Superhigh gain
- One Cable Solution - CBand
- Dual Output KU 11300 MHz

Positioners

- Superjack EZ-2000
- Superjack DP-6600, DiSEqC 1.0/1.2
- Technosat DP-200, DiSEqC 1.2
- Manual Actuator Driver - EW101
- SAP 2000: 99 Memory positioner

Actuators

- Superjack HARL-3618, 18" Actuator
- Superjack HARL-3624, 24" Actuator
- Superjack DG-120, H/H Mount

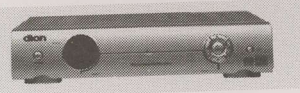
Receivers

- SuperNET CA, Irdeto Embedded
- Success, Free-to-Air
- Dion DT-370, Free-to-Air Receiver
- Dion 2x CI, Hardware ALCAMed
- ChangHong, Mediaguard embedded
- SuperNET Terrestrial, DVB-T
- Phoenix High Definition STB

Dish and mounts

- 1.2, 1.8m Solid Prime focus
- 45, 60, 65, 85cm KU dish Offset
- 2.13m, 2.27m, 2.4m, 3.0m, 3.07m, 3.7m, Mesh Dish, Light and Heavy Duty PSI and JOYSAT Available
- CBand Wall brackets
- CBand Concrete mounts and stands
- KU Gutter mounts
- KU Wall mounts
- KU Float mounts
- KU Tinroof mount

Dion 818 CI - Digital Satellite Receiver



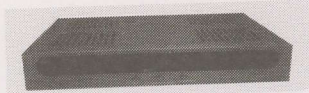
- Slim Size and User Friendly OSD
- 2x CI (Common Interface) slots
- Hardware ALCAMed

SuperJack H-H Actuator, DiSEqC embedded



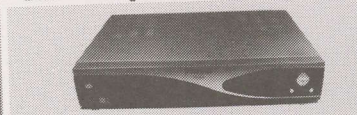
- All it takes is one coaxial cable....
- NO MOTOR CABLE REQUIRED**
- DiSEqC Positioner EMBEDDED!

Supernet - Terrestrial DVB-T



- Digital Terrestrial Receiver
- Slim Design
- High Quality Picture
- Easy to install and use

Dion316 - Digital Satellite Receiver



- FTA + Software Patched
- 4000 Channel Memory
- DiSEqC 1.0/1.2 Compatible
- Price: \$170AUD + GST

Switches and Splitters

- 2 and 4 way DiSEqC switches
- 0/22kHz switches
- 2 and 4 way cable splitters
- V/H Multiswitch
- 0/12V Switch

Cable - 15m, 25m, 305m packs

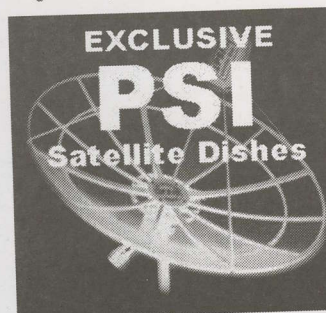
- RG6-U Dual Shield Coaxial Cable
- RG6-U Quad Shield Coaxial Cable
- Cat5 Actuator Cable

Plugs

- F Connectors, Screw or Clamp types
- Cable joiners
- AV Splitters
- Cable Strippers
- Cable clampers
- Various other joiners and accessories e.g. RCA/SCART cables and converters

Misc

- 2.4GHz AV Sender
- Irdeto 2.06B CAMs, Viaccess CAMs
- Satlook Digital Signal Meter
- Satlook Analogue Signal Meter
- Satlook Digital + Analogue combo
- Satellite finders
- Angle level measure instrument
- High Quality Compasses



SatFACTS MONTHLY

ISSN 1174-0779

is published 12 times each year (on or about the 15th of each month) by Far North Cablevision, Ltd.

This publication is dedicated to the premise that as we enter the 21st century, ancient 20th century notions concerning borders and boundaries no longer define a person's horizon. In the air, all around you, are microwave signals carrying messages of entertainment, information and education. These messages are available to anyone willing to install appropriate receiving equipment and, where applicable, pay a monthly or annual fee to receive the content of these messages in the privacy of their own home. Welcome to the 21st century - a world without borders, a world without boundaries.

Editor/Publisher
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our 12th year!

COOP'S COMMENT

Anyone who has read SatFACTS more than a few months is aware I especially like the opportunity to break, first time in the world, information about new hardware (or software or both combined) when someone's innovation seems likely to change the way the telecommunications world functions. This is another of those SatFACTS issues.

Global Touch Solutions Australia is a relatively recent (18 month) firm with their finger on new hardware/software capable of totally rewriting how the world communicates. *The world.*

It weighs under one pound - 16 ounces. At least the part we are mostly concerned with here. Think of the TelePhoSee (not your most marketing-oriented name) as an 'integrator' capable of turning your house, office, tool shed into a *source* for television. Or radio. Or both. Think of it as a device that allows users to send complete home-made or commercial video plus sound to essentially any other location in the world (provided your location and the distant one or ones are capable of at least 256 kbp/s 'broadband').

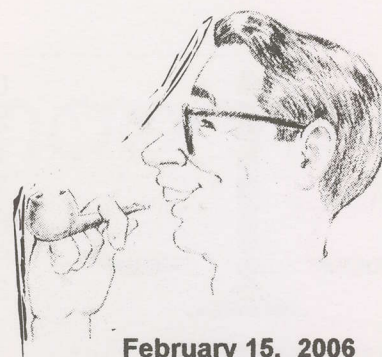
And you say the locations you have in mind barely have electrical power, being isolated in somebody's outback? No problem - GTSA can fix that with an iPSTAR two-way Ku-band satellite terminal that jumps over, around, past the bandwidth limited telecom world putting the user directly into the world-wide web at 'high bandwidth speeds'.

Some 18 months ago we had the first troublesome experience with something called UNwired in the 3.4-3.6 GHz region; Garry Cratt at AV-COMM postulated at the time, "thousands of C-band terminals are now out of business." Four months ago the same "wireless internet" service appeared in Fiji, much to the alarm of that country's pay-TV satellite provider Sky Pacific. And now the same system is just around the corner for New Zealand. The Australian firm promoting this "wireless" concept now claims 25,000 plus subscribers, primarily in Sydney.

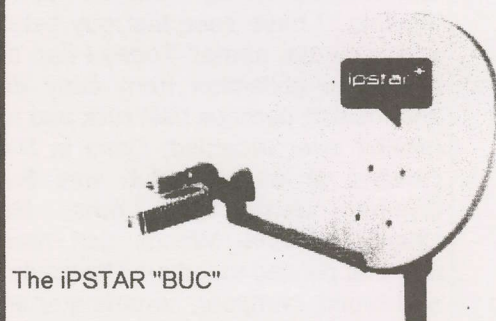
The two 'topics' are related in a convoluted way. The public now clearly has expectations concerning high speed access to "the world". A home without it because they don't want it is one thing; a home without because it is simply not available is quite another. "Wireless" is one answer, jumping over and beyond the temporary limitations of copper wire telephone networks. But wireless is self limiting - there are finite megahertz available and each time a new subscriber is added the load on the available infrastructure (read the storehouse of megahertz) increases. There are three answers to this, not all timely: (1) Individual service speeds slows down, a function of too many users and too few megahertz. (2) Those clever people creating compression systems ('Codec') introduce even better algorithms making more data fit into existing megahertz. (3) The wireless folks convince regulatory authorities they require more megahertz. In fact, as a function of time we *will have* (1) followed by (2) followed by (3); depend upon that.

And, there will be temporary answers which we will resist but lose anyhow; an expansion of the current wireless 'band' up into our 3.7 GHz lower C-band limit, making pollution of C-band reception even greater than it is now in Sydney or Suva. But as terrestrial analogue shuts down, a number of TV channels become available on a geographic specific basis for the expansion of the various wireless technologies (see page 4, here). Crunch time is until all analogue TV goes away and government agencies have their presently megahertz of spectrum to reallocate (actually, resell!) to the expanding needs of wireless interconnection technologies.

Meanwhile, we have those who will leap frog over the top of all of these terrestrial problems and roadblocks by cutting out the entire local terrestrial network in favour of direct-to-bird-and-back. This is where GTSA and iPSTAR rise to the top of the pile with an answer which none of the terrestrial competitors can touch. Expensive? Cost is relative and for many homes and most businesses, the cost is secondary to performance. Once again, satellite is undergoing a rebirth that very possibly will make most of us forget pay-TV; permanently.



February 15, 2006



The iPSTAR "BUC"

In Volume 12 ♦ Number 138

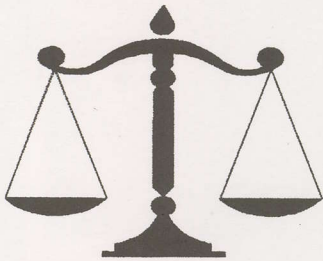
FREE calls using satellite video on Internet -p. 7;
Optus plying with Aurora cards? -p. 19

Departments

Programmer/Programming -p.2; Hardware/Equipment Update -p. 4; SatFACTS Digital Watch -p. 23;
Supplemental Data -p. 26; With The Observers -p. 27; installing dealers -p. 29

-On the cover-

Disappearing breed? Are terrestrial TV antennas going? March SF#139.

**Only in SatFACTS**

"Following all of your recent references to Kenny Schaffer, I began thinking, 'I have seen that guy before and know the name!' Today I had out my video collection from early 80s and located perhaps best rock and roll concert ever recorded. Done in New Orleans at a night club was Fats Domino, Jerry Lee Lewis, Ray Charles, Charlie Woods and many more all playing together! The producer, I found, compere, co-ordinator and song writer was one 'Paul Schaffer'. Surely Paul must be Kenny's perhaps better known brother who is in the music business. Is he still alive today?"

Morris, Bangkok, Thailand

SF went to Kenny for a response:

"What is funny about all of this is that when Paul Schaffer started at NBC doing the (Dave) Letterman show in the 1980s, the NBC computer went wonkers and would send to me his weekly pay check at my wireless microphone company. So little Paul used to crawl into my office each week and beg us for his money!! As for 'is he still alive today?', your reader should tune-in the (now) CBS Letterman Show where Paul appears every night as 'Doc Watson' (aka Paul Schaffer)." To which we add, no, Paul and Kenny are not brothers, nor related to the best of our (and their) knowledge. And you thought today might pass without your learning one new thing!

Television's Pirates

"I appreciate your honesty in declining my request to purchase 'Video Pirates: Hiding inside your television set' on CD and your explanation it is now being hard cover printed for release in April. So when can I get a copy of the printed version?"

Arthur L, Honolulu

Our hard cover printed title, all 928 pages, is "Television's Pirates: Hiding behind your picture tube", locally referred to as 'War and TV' because of the physical size (think 'War and Peace'). It will be first released at the Atlanta USA show April 18th, by mail May 1st; see p. 32, here.

**PROGRAMMER
PROGRAMMING
PROMOTION****UPDATE****FEBRUARY 15, 2006**

Tasmania no show. Brian Watson, the spark-plug behind the March 2-4 Australasian Satellite 2006 Conference and Trade Show advises the show has been cancelled. Watson had been quite successful in attracting 30 trade show exhibit booth spaces as registrants but as of 31 January only 7 (!) attendees had signed up. Watson spent 18 months in planning and arranging the gathering attracting mainline speakers from as far away as Germany ("Dr Dish") and the USA (Tim Alderman). A number of new, first-time-unveiled products were planning to use this show as a spring board to industry growth, including the TelePhoSee system revealed starting page 7, here. Watson has special thanks to Garry Cratt (Av-Comm), Southern Cross Network and Globecast for their efforts. Sadly, the show will not go on.

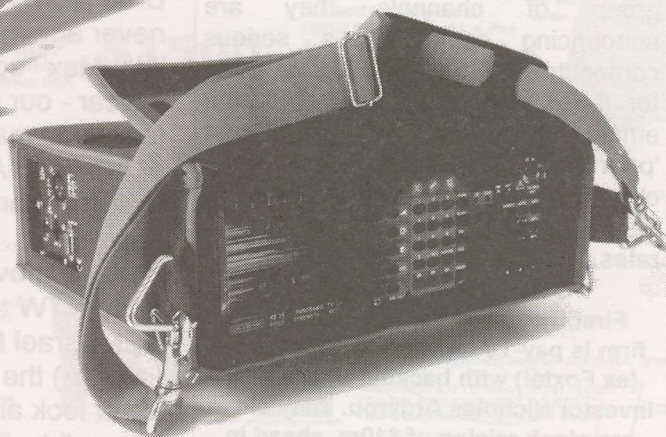
However, there will be Laceys.tv Digital Television Seminar March 2nd at TAFE Tasmania (Newnham Campus, Launceston) which is FREE to attend. Hours 4PM to 9PM, catered dinner and quality engineering presentations: Diversity reception technology, Measuring BER/MER, Latest MATV Technologies, Dealing with impulse noise and more. Laceys.tv had scheduled and booked this event as a bonus add-on to the now cancelled Satellite 2006 Conference (see, above) and with speakers lined up and other arrangements made, plans to go ahead with it. Because a hosted dinner is included, you must RSVP Laceys.tv (03) 9776 9222 or Email glenda@laceys.tv by 10AM Monday February 27th.

Al Jazeera International plans a March launch, likely on As3S, as the English language version of the sometimes **ALJAZEERA** INTERNATIONAL controversial Qatar-based 24 hour news service. There are some surprises in the on-air staffers including a New Zealand 'connection'. Using four broadcast centres, 'English' will rotate with the world from Kuala Lumpur, Doha (Qatar), London and Washington with separate news anchors at each. Their promotional literature notes, "Al Jazeera International will offer a fresh 360 degree perspective on world news, providing information that is complete and unvarnished. The channel will seek blue-chip journalism with accurate, impartial and objective reporting." Hey - if Fox News can claim, "Fair and balanced reporting," why not these folks? 'English' has tapped a rich vein of skilled, well known journalists for this effort. Included are such names as Felicity Barr (London - ex -ITV), Stephen Cole (London - ex-Sky News, CNNI, BBC), David Foster (London - ex Sky News), Veronica Pedrosa (Kuala Lumpur - ex CNNI, BBC), Riz Khan (Washington - ex-CNNI), John Rushing who resigned from the US Marines in protest to the attack on Iraq, Sir David Frost (London - ex everything). New Zealand connection? Trish Carter, ex TVNZ and Newstalk ZB, Kuala Lumpur Bureau Chief.

Smaller, Lighter, Unaohm



Measure strong and weak Digital and Analogue TV signals accurately with market leading functions that are easy to use and weigh less. Instruments that leave both hands free so you can ...stand on your hands.



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Branches in Sydney, Ulverstone and Woolgoolga

New Zealand: Hills Industries (09) 274 6509

UNAOHM

Since 1935

Satellite Expo 2006-Atlanta

"I note you have been publishing the show dates as April 18-20 when in fact that is not quite correct. April 18 and 19 are extra-cost or free seminars each presented by a specific company with advance registration mandatory. The actual 'exhibit hall show' is April 20-21 and 22 (Thursday - Saturday). Of course there is no reason visitors from the Pacific or Asia cannot attend the seminar sessions (18-19), those who are not planning to do so will best be served by attending April 20-21 and 22."

Tim Heinrichs, DMS International
The original 10+ who indicated they would like to attend as a part of a 'Pacific Expeditionary Force' has thinned down to 5 to 7 at this point (February 9), with a February 15 cut-off date. We encourage readers to go to the show/s website for the full details: <http://www.satelliteexpo2006.com>
Heinrichs' firm, DMS International, is our "Host Booth" for wandering Australasians.

SelecTV's English programming?

"If Boulos learnt anything from his unfortunate episode called TARBS, perhaps it was that including English language programming (movies, CNN, etc.) was not a positive in the mid of potential subscribers. So I cannot see how the proposed PAS-8 SelecTV service package which plans a similar set will benefit by mixing ethnic and English. FTA terrestrial, for as long as that lasts, is still a very robust service commanding the vast majority of viewing time."

IF, Queensland

"My view is that \$29.95 for the group of channels they are announcing could be a serious competitor to Foxtel and Austar, even for those who have no use for the ethnic channels. A lower-cost 'premium TV' package deserves a chance as long as they don't hook people at \$29.95 and then raise the rates."

Leon Senior, Lacey's tv

First they need money. Heading the firm is pay-TV top-dog Jim Blomfield (ex Foxtel) with backing of property investor Nicholas Argyrou. They did a pre-stock raising of \$10m, ahead in March a planned additional attempt to raise \$18m. Currently, SelecTV has 5 Spanish plus one Greek channel operating on PAS-8, using transponder assets abandoned by Mike Boulos.

HARDWARE EQUIPMENT PARTS

UPDATE

FEBRUARY 15, 2006

Where the boys are. Australia's planned switch from analogue to digital radio (DAB), still under study, presently plans an unusual split-band approach. For major population areas, DAB will primarily be located in analogue-TV vacated band III 'TV' channels (the TV being shut-down). For rural areas, TV band I (45 - near 70 MHz) would be employed, again following shut-down of analogue TV there. Limited testing, Sydney, in band III continues.

Optus is upgrading Aurora smartcards, apparently intending to reduce the widespread practice of using piracy 'gold cards' for access to services such as ABC, 7 Central, Imparja, SBS and WIN. An announcement appearing on the Optus Tune Channel from January 23 has the details; see page 20 here.

Worst marketing idea? Everyone knows that "Programmer Kits" plus "Gold Wafer Cards" equals naughtiness. Everyone also knows this

approach to hacking of pay-TV services has passed its use-by date. Passee. Over. A bit of history. Enter now Australian (and NZ) electronics parts house distributor Jaycar with the "warning announcement" shown here, suggesting this package, "(provides) access to Foxtel's full range of services". Dream-on. Not today, never again, a 'MadMax' "solution". Jaycar - our nominee for "worst marketer" of the year. Alas, the year has barely begun!

Ruski move. Russian channels on NSS-5 have been moved from 177W to AsiaSat 4's Ku band; 12.430, Sr 20.000 with NTV, REN, Israel Plus, Inter Plus + 2 radio. For some NZ subscribers (it is CA) the change meant loss of service because of the much lower look angle; for those, a change to the RTV service on B3 is possible. Tony Dunnett, through apsattv.com, reports antenna size now required can be as large as 1.1m - a major change in user cost (requiring commercial mount, 3 HD stays). Look angle in Auckland is 23 degrees - adding to possible blockage issues and increase in rain fade susceptibility.

WARNING

Jaycar has noticed a substantial increase in sales of the KC-5361 Smart Card Programmer kit & ZZ-8800 Programmable Gold Wafer Card.

We have learnt that this may be due to persons unknown cracking the digital access code for Foxtel Digital (and associated entities) set-top cable TV boxes.

Apparently this code information is now on the internet. Jaycar wishes to advise customer that we do not condone the bypassing the information and getting access to Foxtel and others legitimate income by pirating the information and getting access to Foxtel's full range of services. Whilst the Programmer Kit \$49.95 & the Gold Wafer Card \$7.95 enable the user to participate in this unlawful activity we wholeheartedly condemn this practice.

Phoenix Technology Group

Satellite Equipment & Accessories One Stop Supermarket



Phoenix 2.35m Motorized Extra Heavy Duty Mesh **\$180 each**
Buy 10 get one Free!



Folding Arm Dish best dish for caravan & camping
64cm \$25/each
78cm \$48/each
88cm \$55/each
North Elev Bracket \$5 each

Irdeto 2.06B CAM	\$110	PBI C+Ku band LNB	\$65
Viaccess CAM	\$110	Zinwell C band LNB	\$35
65cm Azure shine offset dish	\$28	Zinwell Ku band LNB	\$25
75cm Azure shine offset dish	\$40	MTI C band LNB	\$25
85cm Azure shine offset dish	\$45	MTI one cable solution LNB	\$45
One leg gutter mount	\$18	Satellite finder	\$25
Two leg gutter mount	\$22	RG6 stripper	\$20
Tin roof mount	\$22	RG6/RG11 crimper	\$30
Wall mount	\$15	Angle meter	\$35
Superjack H-H motor	\$95	Compass High Quality	\$10
2.3m SD mesh dish	\$150	RG 6 Crimp Connector 100 pack	\$25
3m SD mesh dish	\$340	22K switch	\$10
3m HD mesh dish	\$380	Two way DiSEqC switch	\$10
3" 2.5m galvanised pole	\$30	Four way DiSEqC switch	\$12
3" 3m galvanised pole	\$35	Satellite 2 way splitter	\$1.50
3" 3.5m galvanised pole	\$40	Satellite 3 way splitter	\$2
3" Triangle Pole for C band dish	\$50	Satellite 4 way splitter	\$2.50
Speaker Stand for caravan use Ku dish	\$45	4 way multi-switch	\$35



Best performance

Paralipses 1.2m prime focus panel dish
\$160/each
AZ/EL mount \$32/each



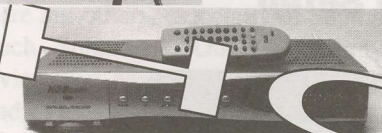
Easy transport
Last stocks of mesh dishes from USA

Paralipses 2.6m mesh dish
\$1500/each
(300/each x5)

Multi-beam 1m offset dish
Ku band satellite from Optus B3 + Optus C1 + Pas 8 + Pas 2
Just one dish to receive all
\$150/each

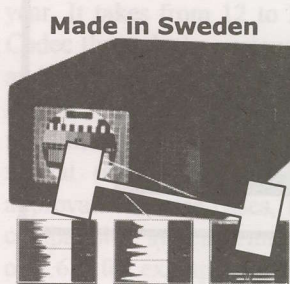


Up to four LNB 30 deg wide



Koscom 1600A Irdeto Embedded Satellite Receiver
\$200 with free Optus Aurora card
Buy 10 or more and get 10% discount & one box of 305m RG6 cable for free

SATLOOK Digital NIT \$1395
Satellite-receiver 920-2150 MHz. Spectrum-analyzer with expanded spectrum.
• Digital BER, QPSK and S/N-ratio.
• 4.5" B/W Monitor for PAL/NTSC/SECAM.
• Tuneable sound 5.5 - 8.5 kHz.
• LNB-voltage 13/18V. 22 kHz tone switch.
• DiSEqC control (1.0, 1.1, 1.2).
• KU- and C-band (with converted video).
• 99 memory-positions for spectrum pictures.
• Satellite identification.
• Symbol rate 1-30 Msymb/s.
• RS 232 for PC connection
• Built in, rechargeable battery.
• Only 5 kg complete with carrying-case.
• Transponder content analysis.



Made in Sweden

SATLOOK COMBO \$2295
The combination of SATLOOK Digital NIT and TVLOOK
• Input frequency: 2-900 MHz and 920-2150 MHz
• 4.5" B/W Monitor for PAL/NTSC/SECAM
• Lots of memory positions for spectrum pictures
• RS232 for PC-connection
• Built in, rechargeable battery. Only 7kg complete with carrying case
TV-PART:
• 2-900 MHz spectrum analyzer
• Presents full range spectrum (and expanded)
• Very high accuracy, ±1dB (at 20°C)
SAT-part:
• 920-2150MHz spectrum analyzer. Digital BER, QPSK and S/N-ratio
• Satellite-ID and TV/Radio-channel info (NIT)
• Tuneable audio bandwidth 5.5-8.5kHz
• LNB voltage 13/18V. 22kHz tone switch



Phoenix 2800A \$110
The Best FTA Available
Quantity price available



Dreamax DT470 \$160/each
Irdeto Embedded Satellite Receiver



Zinwell 15K LNB \$28/each
for box of 24



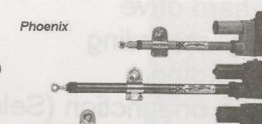
Moteck SG2100 Motor \$105/each



SuperJack EZ2000 Positioner \$50/each



Moteck V Box II DiSEqC1.2 Positioner \$65/each



Actuator from 12' standard duty to 36' heavy duty
From \$35/each to \$220/each

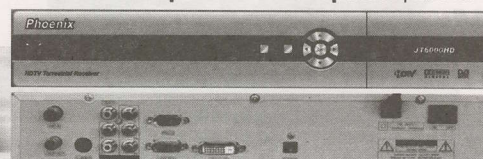


RG6 Cable Dual shield \$65/box
Quad shield \$75/box

Phoenix JT3300A Digital Terrestrial Receiver \$110-1 buy \$99-5 buy



Phoenix JT6000A High Def Receiver with DVI output December special \$290ea



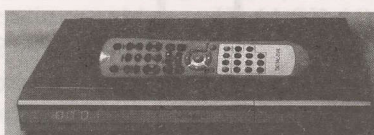
This Month Special

Optus B3/Pas 8 Free To Air channel Package

5x Phoenix 2800A digital satellite receiver
5x 64cm foldable arm dish
5x 11.3GHz/10.7GHz/universal Ku band LNB your choice
5x Gutter mount/wall mount
One Box RG-6 Cable

\$975 (\$195/each x5)

Magix 9600 \$145 ea our clear out price don't miss out with embedded cam and 2x cam slots



Optus B3/Pas 8/Optus C1 Irdeto embedded channel Package

Koscom 1600A Irdeto cam embedded digital satellite receiver x 5
64cm foldable arm dish x 5
Zinwell 11.3GHz/10.7GHz/universal Ku band LNB x 5
Gutter mount/wall mount x 5
One Box RG-6 Cable
That's only \$255 each

\$1275 5 Unit Package Price

C band free to air channel Package

5x Phoenix 2800A digital satellite receiver
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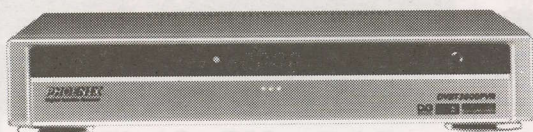
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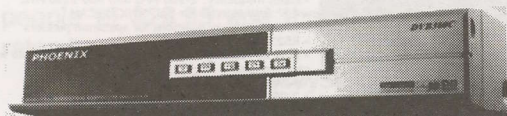


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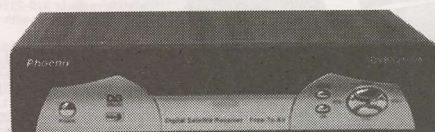
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Global Touch Systems Australia has found the golden ring

This report is about a new innovation which by all outward claims must be too good to be true. Rupert Murdoch, run for the hills. Telstra, come to the party. Telecom NZ - get out of the 'dark ages'. The future is here and it is free. FREE.

VoIP (voice over internet protocol) has attracted tens of millions of phone users in the past 18 months; Skype, for example, claims 45 million users. Their secret is a small base charge and then unlimited calls world-wide for no charge at all, or in the most expensive situation, pennies per minute. Their technology makes use of Internet, tetra-hertz of bandwidth largely unused because of the roll-out of fibre and broadband technologies over the past decade. When something is available, and under-used, it becomes cheap - very cheap - in the marketplace. Why should you, the consumer, pay NZ\$10 for a two hour phone call to the UK when the same connection is available using VoIP for perhaps \$0.20 or less - *even free?*

Global Touch Solutions is an Asian based firm with three important connections. First, to the world through Internet and second into Australia through GTSA Australia, a one year old Melbourne based firm. And third? iPSTAR, the Thailand owned satellite (120E, put into service late in 2005) with the capability of providing a direct, two-way link between outback Australia (New Zealand, Fiji, New Caledonia, etc.) and the world with 4 Mb/s download speed and 2 Mb/s upload. So far, it sounds like other offers. Alas, the 'link' is only the launch part. For once connected, the user can make phone calls (using VoIP which is built into the service) and - get this - one or two-way video linking essentially without charge. FREE is the operative word here. Each GTSA user is assigned an "internet phone number" (our office unit is 617001100014) and anyone in the world can access this number using either their own VoIP connection or broadband VoIP connection.

The video part

To be a part of this system, the first requirement is that you are a customer of a 'telephone company' that offers world-wide VoIP connections; GTSA (Global Touch Solutions Australia; www.myfreetalk.com) is one of these. There are others, especially in Southeast Asia (google Global Touch Solutions). Once a customer of their broadband service, you have several options, including adding a small handset unit with a built-in 4 inch LCD screen (above, right). This device allows you to do any of the following:

1/ Make a VoIP telephone call, no video, to any other network connected VoIP device; no charges.

2/ Make a 'conference call' to up to four (4) people, again using VoIP; no charges.

3/ Add video to any of the calls or callers provided only they are also equipped with the (TelePhoSee) device.

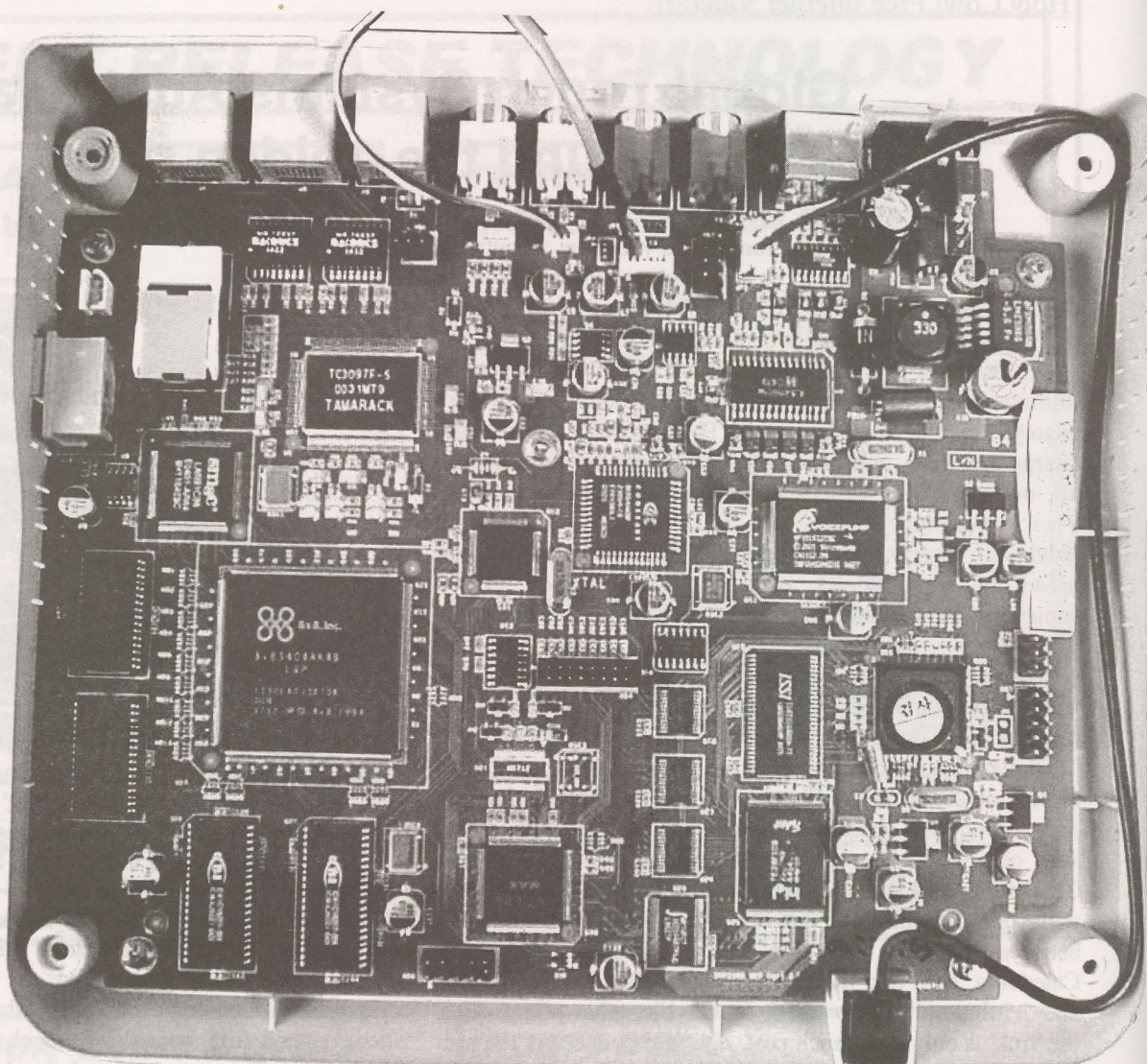
Video using Internet has had a varied and chequered history, much of it hyped beyond reality. 'Video' between two (or more) points, using standard telephone connections (PSTN - Public Switched Telephone Network) or ISDN



Only modestly impressive in physical appearance - the GTSA TelePhoSee does almost everything you can demand of a 'triple threat' state of the art machine. Best of all, it provides FREE Internet phone and video calls. See text.

(Integrated Services Digital Network) have a reputation of poor quality; all richly deserved. Video through Internet depends upon something called the Codec Algorithm, a compression technology that turns what is a very fat (as in video) signal into something much smaller for Internet distribution. There are several levels of Codec currently employed; H2.62 (also known as H3.62), H2.63 (H3.63) and H2.64 (H3.64). These sequential numbers (.62, .63, and .64) identify a particular genre of compression; the larger the number, the more recent the algorithm. Older format videophones were designed around 2.62/H3.62. Current technology Codec video phones are 2.63/H3.63 while the fast approaching replacement is 2.64/H3.64. Each new version has significantly improved the quality of video compression, 'quality' referring to the image one sees at the end of the line, the reception point. Yes, a 2.65/3.65 is in the works with 2.64/H3.64 becoming the current state-of-the-art standard this year. It takes from 12 to 24 months to run a new version of Codec through the various layers of approval (IEEE, SMPTE and other) technology groups who must pass muster on a new format before it is 'approved' for product use. Brave manufacturers will adopt a new, not yet formally approved, format (such as 2.64/H3.64) prior to its gaining formal approval. In some cases, the Codec format is not backwards compatible - systems running on 2.64 might not process 2.63, or 2.62, for example (or if they will, it will be at the earlier 'standard' quality).

There are a number (five or fewer) videophone hardware options out there in the marketplace; Motorola, for example, offers Ojo (Spanish for 'eye'). Videophones have had a bad rap (bad reviews because the quality was at best poor) until very recently. In fact, enough people have been burnt by



Inside - for the tekkies. A much larger number of discrete ICs than one finds in a typical satellite receiver suggesting, correctly, this particular arm of the consumer electronics industry needs more volume to reach custom-design, function specific chips. That will come, soon - if sales warrant.

going into the videophone dealer (or distributor) business and losing lots of money that selling this service today is an uphill battle, the reputation of what preceded being a very difficult smoke cloud to clear. Rest assured, when combined with an appropriate service provider (such as GTSA), the last thing you are going to hear complaints about is, the "quality of performance."

Earlier versions of videophones have attempted to compress a video image into a PSTN 28/56 kbps phone line. A mistake, destined to remain impractical until perhaps Codec 2.68 or so (if ever). Small bandwidth telephone circuits (PSTN) simply cannot accept but a fraction of the compressed video data found in a videophone. Two litres of liquid will not fit into a one litre bottle. End of story. Which gets us to 128 kbps. Codec 2.64 will provide nearly perfect (no jitter, glitching or image loss) at 128 but to be really functioning properly, the videophone circuit would much rather 'see' 256 kbps. Oh yes, today, 2.64 is not yet installed in any of the videophones described here although Apple Computers does offer 2.64 in their iView webcam two-way (or one-way) video add-on to a Mac computer. And just in case you are a TV2Me fan, it uses

2.64 as well (with patent pending modifications that only TV2Me has available).

Our test

We begin with two GTSA provided TelePhoSee terminals. TelePhoSee is a Korean firm (www.wooksung.com/eng/html) betting their corporate growth and farm on their videophone. They currently use Codec 2.63/H3.63 although 2.64/H3.64 is scheduled to be available by June-October. The terminal is a light grey coloured box with a 4" TFT screen that lifts up from being a cover on a more or less standard-looking telephone keyboard (1-0, * and #). To the left, a lightweight telephone handset. To the right, 12 separate buttons that allow the user to manipulate the functions and operating mode of the box. A tiny microphone/speaker is built-in as well as a CCD format colour camera mounted at the top of the LCD screen. When you lift up the screen to view it, you are also positioning the camera view angle and the entire lift-up lid swivels so you can change the physical view of the camera without touching the basic instrument.

This device from TelePhoSee is an optional add-on box that is available to subscribers to GTSA. It has a cost (list price A\$888, GST inclusive) and it plugs into your PC, your server,

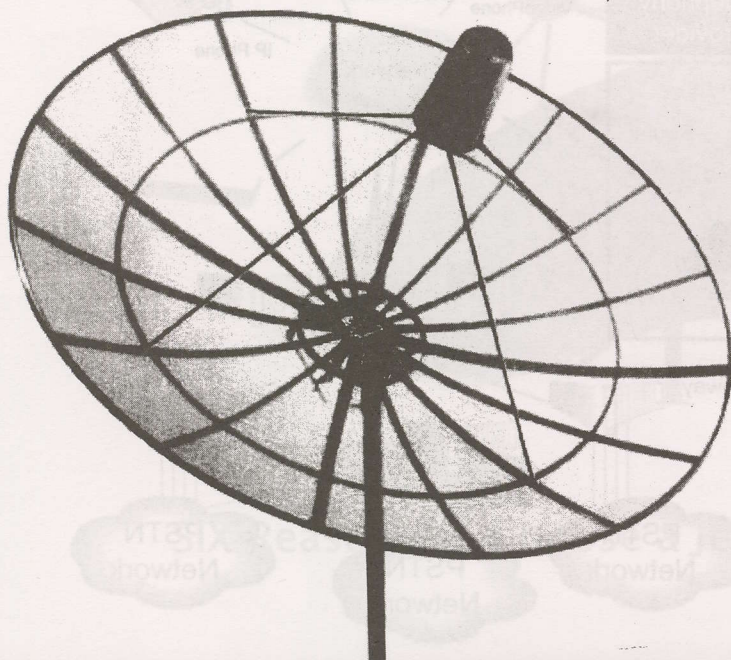


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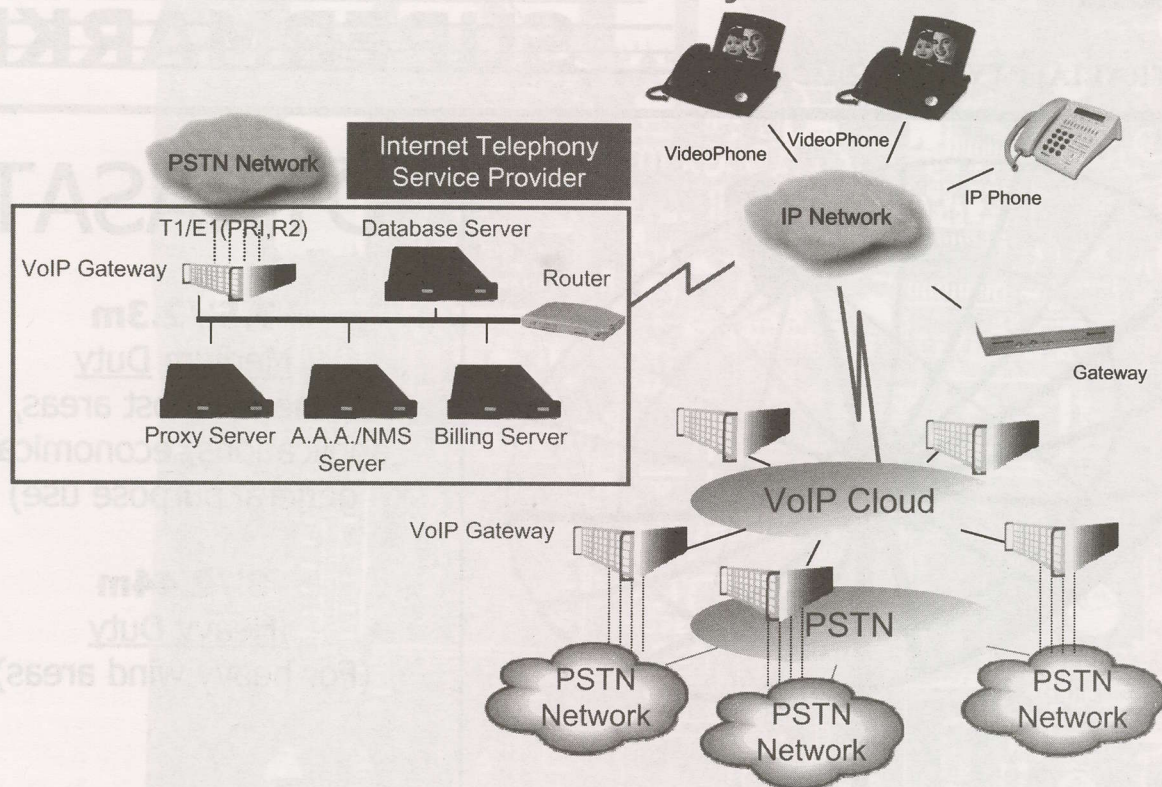
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VoIP Service System



At the end of the line, before it heads for satellite, is the 'VoIP Gateway'. This is the facility that makes the connection to satellite, or fibre or both, to 'route' the call from the origin point to the destination.

router or directly into the broadband jack. When it arrives from GTSA, as an optional part of your telephone connection contract, it will have your 61-7-XXXX XXXXX GTSA internet-assigned number embedded.

There is more. While most users will find a 4"/100mm LCD screen adequate for close-in viewing, on the rear apron are twin RCA sockets to connect a standard monitor or TV set (with A/V inputs) for a larger screen experience.

And more. Read this carefully, especially if you are not a fan of Rupert Murdoch. Also on the rear deck, a second pair of A-V sockets into which you can plug-in any source of video (plus audio) that is 'handy'. Yes, it could be your camcorder, your VHS player, a DVD baseband (V + A) output. What else might be connected here??? Use your imagination.

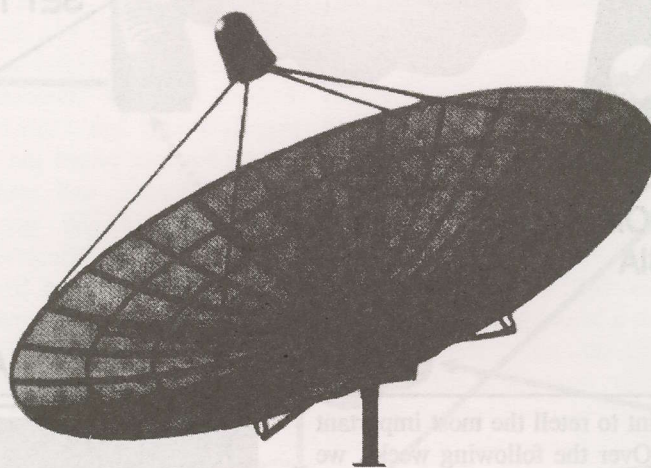
To help you imagine, remember what TV2Me does: Allow you, from a point connected by Internet to access whatever just happens to be on your home television set at that moment. For the record, TV2Me is a point-to-point service allowing one distant point to be video (+ audio) connected to a 'home TV2Me terminal' with the added ability, from a distant point, to 'change channels' back at home using your standard carry-with-you home TV remote. TelePhoSee, in the present form, does not allow remote channel changing. If you were to connect to something from home (such as a Rugby Match), this would require someone at home to select the channel to be linked via TelePhoSee. Think of it as a

'manual remote control', requiring human intervention (TV2Me is totally automatic, of course).

Our two units for test. One went to New York (City) when TV2Me inventor Kenny Schaffer promptly added it to his router. The second stayed at SatFACTS in New Zealand connected to our 'broadband' telephone line. Using an Internet available 'route checking' system (www.pcpitstop.com) from both ends we calibrated the through-put speed of the available Internet links connecting New Zealand's rural northland to 'the city'. We found the links could sustain upwards to 1 Mb/s with numbers such as 551 kbps more typical. If you go here, pursue it through "About Bandwidth" to check the in and out speeds to a number of different (USA) sites.

Our SatFACTS unit arrived with four previously embedded telephone numbers, two assigned to us by GTSA of which one was for Schaffer in New York. Dialling him was simply a matter of selecting that number from the memory (it will hold 999 numbers) and pushing 'dial'. On his end, the box 'rang' (a totally distinctive [user selectable] ringing tone sequence that cannot be confused with anything else you have), he picked up the handset and said 'hello'. Instantly on our 4" screen there was Schaffer in New York with a postage stamp sized inset in the upper left hand corner showing what our end's camera was seeing. In New York, the reverse; we filled his screen, he saw his own end video in the same postage stamp inset on his screen.

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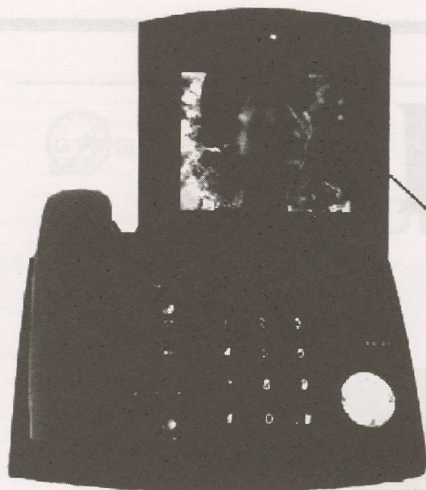
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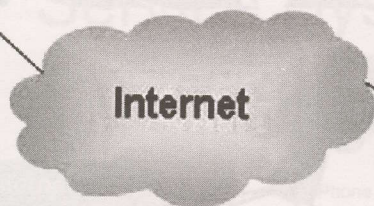
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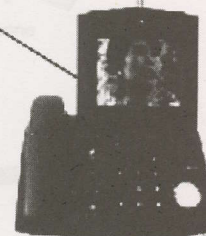
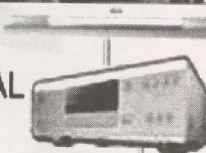
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This would be a suitable point to retell the most important part of this exercise: FREE. Over the following weeks, we would simply "leave the circuit open" for hours on end, Kenny doing what Kenny does when he is +6 hours/- one day from New Zealand and we doing what we do 18 hours a day, sitting at a keyboard hacking out new words for another publication.

"Hey Kenny - what's for dinner?"

Once contact is established, you can place the handset back in the built-in cradle and now use the speaker phone to make it a hands-free connection.

"Russian food. I feel like something Russian."

And so it went, an hour, two, four - "Hey Kenny!" "Hey Coop?"

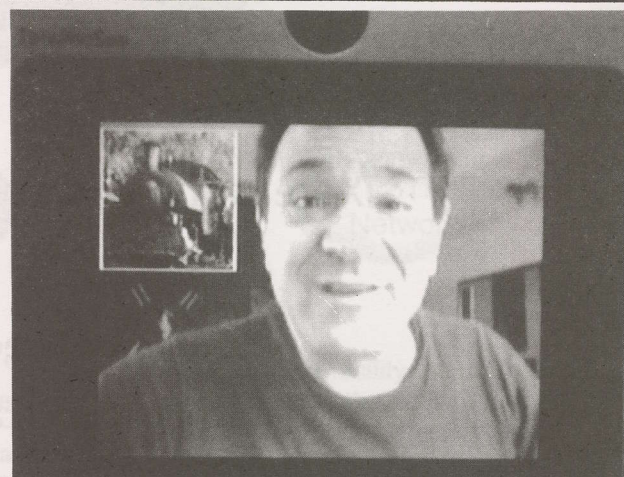
FREE. Full-time 'Kenny-sitter-service' for as long as we could deal with the interior view of his 13th floor West 58th Street apartment. Visitors came and went, "Hey Bob - say hello to Jonathan - be brought me some pizza!"

The quality? In four hours not a single framed 'dropped'. There was not one instant of pixelation. It was as if Kenny had installed a CCTV camera in his apartment and New Zealand was simply watching a wire-connected monitor, direct. That good?

That good. And this is Codex 2.63/H3.63, not even the rapidly to be implemented 2.64 which Apple is so verbal about! What about the overall 'quality'? Glad you asked. The equivalent of a CCTV camera (VHS in the SP or slow play mode). Naturally we played with the direct connection speeds, as TelePhoSee/GTSA provides a simple menu that allows you to wander from 56 kbps (trash!) to 512 kbps. Kenny changed his, we changed ours in unison. We found that for the built-in CCTV camera, 256 at Codex 2.63 was fine - no problems (128 was less perfect but not much; see below). And the wider bandwidths such as 384 and 512 were actually worse; the system wanted the right (as in correct) matching speed to go with the content of what we were transmitting.

Now, those connections on the rear. Yes, you have been patient about this up to this point!

First the no-problem sockets; V and A output. On a 14" screen Kenny looks like Kenny and he reported on a 19" New Zealand looked the same (being especially envious of our out-of-front window view which happens to be of New



Kenny in New York (main screen image) and us sending to Kenny New Zealand TVOne; simultaneously. Read on.

Zealand coast line, blue water filled with 14-16 foot white sail boats). There is an internal to TelePhoSee (menu reached) set of controls to change the visual response curve of the built-in CCTV camera. On the 4"/100mm TFT, the images looked extremely good; on a 14" we were moved to go to the menu and 'tone down' the red a notch or two. Which it does quickly and simply (the alternative would have been to do the same thing with the TV set's menu). Just for fun, we plugged a (quality) 3-CCD camcorder into the external video input, while keeping the audio line connected to the speakerphone (you can switch to external video, external audio, or both together with the menu) and ruined Kenny's day with a detailed tour of our New Zealand coastline. When you live on the 13th floor of an apartment surrounded by 50-100 story buildings, you don't see much but other people's open windows or laundry.

OK - your patience has worn thin.

Next we ran an RCA jumper line from the video output on the same 14" set connected to New Zealand television. Now we were about to send real-world commercial television to New York.

"How does it look, Kenny?" we asked, keeping our audio speakerphone line 'open'.



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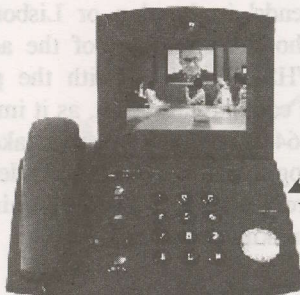
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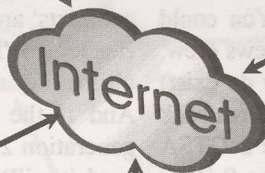
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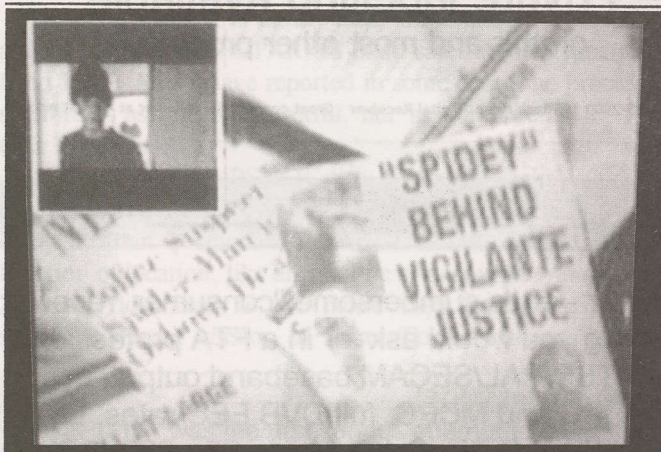
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AUCKLAND, NEW ZEALAND

VIDEO CALL CUSTOMERS, SUPPLIERS OR COLLEAGUES LOCALLY,
NATIONALLY OR EVEN INTERNATIONALLY FOR A COST FREE CALL

Business users of VoiP/GTSA will find the options far more diverse than this report, including transmitting medical data live and direct between two points.



Spiderman from HBO New York, as received in New Zealand; VHS-SP quality. Certainly not TV2Me 'perfect', but for "most" consumer applications, very satisfactory - even on a larger screen (see text).

"Too damned good! It is not TV2Me by any stretch but it is extremely good here. Can I have audio, please?"

OK, now we asked Kenny to reverse it - send us New York cable TV channels while we were simultaneously transmitting to him New Zealand TVOne.

"Too damned good!" was, we found, an understatement. Low bandwidth American cable products, such as Cartoon Network, were for all practical purposes totally comparable to our own local products from Sky NZ. Hummm. Movies (such

as HBO New York) not as good as our own but not much worse; only to a critical eye. The real test was with sports, high action sports such as soccer. We experimented and found that when we both switched to 384 (from the built-in camera ideal 256 kbps) we had the best results; very (maybe once every 15 minutes) locking for a second or two followed by immediate recovery without anyone touching a control.

"Leave it on TVOne and let it run overnight," Kenny was asking. "I want to see how it holds up." It was 3AM in New York by now (9PM in New Zealand) and after six-plus hours of being in constant connection-contact it was time for both of us to call it a day; he especially.

Yes - there are 'copyright challenges' here

GTSA folks, when we reported this sequence, were less than pleased. "We don't want to promote this for the feature you tested," they offered. Kenny Schaffer, who knows more about when copyright applies (and does not - because of his TV2Me equipment) offered a reaction.

"If this entire link goes through the GTSA server, they are (like those people who were a year ago using Napster to exchange audio downloads) vulnerable. A server that 'processes' a copyrighted video link can be called on the carpet for being an accessory." Perhaps.

The GTSA TelePhoSee package is of course not intended as, promoted as, a tool to pickup a Sydney Rugby match off of local TV and link it to Alice Springs, Ankara or Amsterdam. On the other hand, virtually anyone, anywhere can become a

GTSA 'member subscriber', be assigned a 61-7 XXXX XXXXX telephone number and do whatever they wish with their TelePhoSee device. Including something that copyright cops might not like.

GTSA is an iPSTAR affiliated firm, their business plan reads they intend to crack the 'broadband-not-available' market throughout Australia (and, New Zealand, those Pacific Islands where iPSTAR reaches from 120E) using two-way terminals built around suitable sized dishes (typically 1m size range). And to offer 'VoIP' FREE telephone (and video connections). Of course FREE does involve purchase of the TelePhoSee optional equipment. And iPSTAR is a second step, different from GTSA (call them in Australia at (61) (02) 8875 4300).

Now, suppose you were a TV station in Australia and a hot news story (such as a coup in Fiji) popped up. You could send to Suva a Ku band 'Flyaway' terminal and a news crew, or with TelePhoSee connected to a broadband (they do exist) Suva port, dump any video (plus audio) you shot in Suva back to Sydney using Internet VoIP; or, in a panic, use a GTSA connection to link Fiji TV's live 6PM news back to Sydney where you could 'extract' local video footage the Suva station shot. Alternately, you are Fiji TV and you have stringer reporters positioned throughout the Pacific, such as Tonga. And you want to cover on the 6PM Sky Pacific news something that happened that day in Nuku Alofa. GTSA and TelePhoSee to the rescue - for the vicinity of \$1,000 a terminal. Wide area news coverage just moved into the high speed, low-cost age. And there are no (or few) copyright 'problems' with these examples; the TV station (or network) either owns the footage their reporters are sending back, or,

they have a 'reuse' arrangement with the originating station. You could even automate the service - set it to 'feed' you the 6PM news from Suva (or wherever) each night just in case something worthwhile happens at 'the other end'. Remember - the VoIP call is FREE! Even TV stations appreciate saving bucks.

Alas, you are not a TV station, you have no negotiated rights to the material, and you want to 'transfer' (TV2Me calls it 'Space Shifting') to a distant point. You are on your own. The first few thousand such users will probably scrape by without a formal confrontation with the Rupert Murdoch copyright cops. But if this takes off in a major way, ultimately just as Napster raised the ire of the music industry, GTSA and TelePhoSee will attract negative feedback from the MPAA and similar groups fearful that 'programming contracts' are being circumvented. Sending New Zealand 'All Blacks' to 'family and friends' in London or Lisbon will, ultimately, attract folks who don't approve of the activity. And if the images are 'VHS-SP quality' with the present generation 2.63/3.63 Codec compression, well, as it improves (and it will) with 2.64/H3.64 later this year, the stakes will rise. The onrush of technology is all too evident; Codecs will improve, bandwidth requirements for a given requirement will decrease. The future is unknown, but certain.

The finer points

Let us now return to the 'intended use' for GTSA's TelePhoSee. That would be telephoning and videophoning. And for those who either live where higher speed (aka broadband) connections are simply not available, a way to join the 21st century information-exchange community.

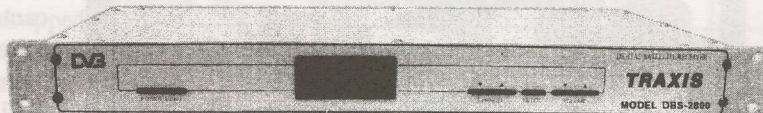


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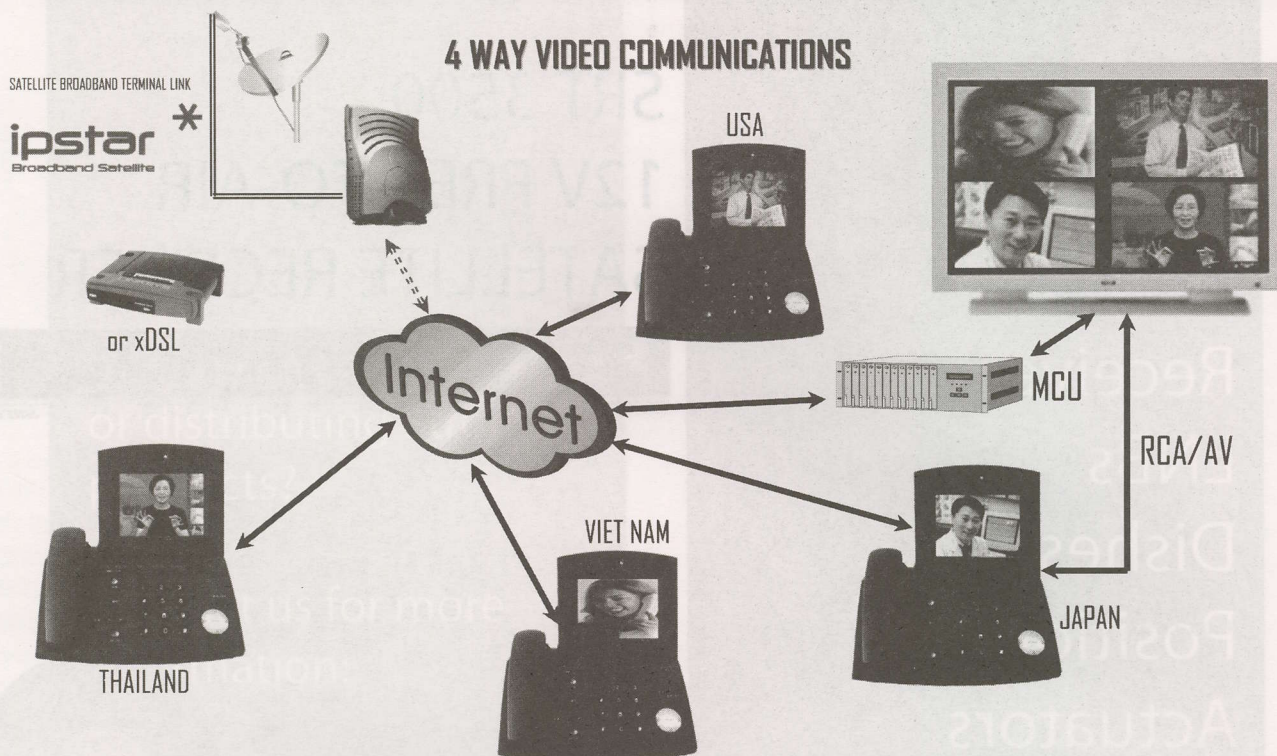


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Up to four video sources can be combined with the TelePhoSee package, a 'live and direct' conference call with the addition of live colour video, with each 'source' coming literally from anyplace in the world.

The secret, and it is hardly that, is the late 2005 launched and commissioned iPSTAR Ku band satellite now functional from 120E. As we have reported in some detail, no preceding satellite is as big, as powerful, nor as complex as iPSTAR (aka Thaicom 4).

An install of an iPSTAR dish system is slightly (but not much, we understand - having not yet done it ourselves) more complex than a standard Ku band install. Dish size is a function of location, like all satellite system planning. In most Australia locations, a 1.2 metre dish that looks like a steroid-fed fatter version of Austar/Foxtel antennas. At the

dish focal point, where nominally one finds a LNBf, a modestly larger 'box' which contains not only the receive system LNB one expects but additionally an uplink transmitter (1 and 2 watt versions available). That would be the two-way part - transmitting back to iPSTAR from the dish. Downlink speeds to be expected (nothing is guaranteed here!) will be 4 Mb/s; uplink at 2 Mb/s. These speeds, translated, should easily allow data down and upload rates in the region between 300 and 500 kbp/s, which is about all you expect from a standard wired network 'broadband' connection.

ISDN? Integrated Services Digital Network

ISDN was the first serious attempt to create internationally adopted standards for end-to-end digital communication through the public telephone network. The original POTS ("plain old telephone service") network was carefully engineered for the human voice, using filters to limit the passband from 340 hertz to 3,400 hertz (3.4 kHz). ISDN began from the premise that with hundreds of millions of "filters" in place, and a network world-tuned to pass essentially 340-3,400 hertz, additional bandwidth would have to come by processing material so that more of it fit into the limited available spectrum. This is accomplished by converting all analogue information to digital. This conversion is done with an adapter known as an ISDN Terminal Adapter (TA). With a TA, a standard analogue telephone, fax or modem can be connected to an ISDN line.

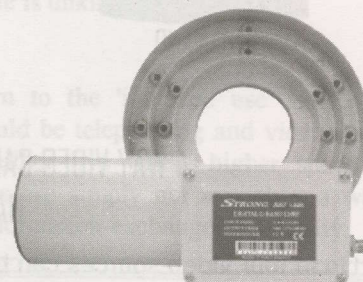
ISDN lines are not universally available, as there is an 'upgrade' required of a two-copper-wire connection circuit before the ISDN option can be added, usually for an installation fee. There is also a monthly service fee increase for a ISDN equipped line. A wide variety of add-on equipment is available to expand the uses of an ISDN line, from video conferencing units to routers. A Network Termination (NT1) is also required at the user location to connect ISDN terminal equipment to the ISDN line. The primary advantage of ISDN is the ability to allow *simultaneous* use for voice, voice-mail, Email, fax and video images. The primary disadvantage, setting aside the cost of the add-on appliances, is restricted speed (64 kbps for a single line).

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LNBS
Dishes
Positioners
Actuators
Switches

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How it arrives; the TelePhoSee device in a
consumer-friendly box. More than 90 pages in the
extraordinary user manual, exceptionally well done.

iPSTAR systems are available to purchase or lease. As each
requires installation by a reasonably professional competent
individual (or firm), there is of course a business opportunity
here. Yes, you will possibly require some training, and
previous or newly learned experience to interface the
customer's existing PC (personal computer) to the
GTSA/iPSTAR hardware + software. The upside is that

Abbreviated Lesson in VoIP / Part One

Audio Codecs: The amount of bandwidth required to carry voice over an IP network is significantly dependent
upon the following four factors: (1) **Codec** (coder/decoder), (2) **IP header**, (3) **Transmission medium**, and, (4)
Silence suppression.

The VoIP Packet: Divided into four main parts. (1) IP Header, (2) UDP, (3) RTP, and, (4) Data payload. (UDP
means user datagram protocol; RTP is the real time transport protocol; Data payload is the useful data. The IP
header is a reference to the IP, UDP and RTP information placed in the IP packet. It adds 20 octets and is
responsible for delivering the data to the destination host. UDP adds 8 octets and routes the data to the correct
destination point. RTP is 12 octets and allows the samples to be reconstructed in the correct order while
simultaneously providing a mechanism for measuring delay and jitters.

Delay/Lag/Latency: Delay is primarily a factor of (1) You Internet connection speed, and, (2) The Node Latency
within the Internet Service Provider Network. The faster the Internet connection, the less voice delay
experienced. And the less latency between the Internet Service Provider (ISP) Network Nodes, the lower the
voice delay. Suitable ISPs have a latency of around 50ms (milliseconds) although latency around 200ms is more
common. A latency above 400ms is deemed unacceptable and creates an annoying circuit delay of around 2
seconds. This means as far as voice delay is concerned, it is normally almost exclusively a function of your
Internet Connection Speed and latency between nodes, not the VoIP service provider.

Checking latency: From your connection point to the destination internet connection:

(1) Run 'COMMAND PROMPT' in Windows Operating System

(2) Type "ping xxx.xxx.xxx" (ie. "xxx.xxx.xxx" is the IP ADDRESS of the destination connection you are checking

(3) A response will read (something) like the following:

Reply from: xxx.xxx.xxx.xxx; Bytes = 32 time = 232ms TTL = 51

(4) Now analyse the 'time=232ms' portion which gives the latency factor for a particular network node. Anything
below 50ms is fine for VoIP, 50 to 400 is acceptable although as you near 400ms the delay will be around 1
second. Delays over 400ms are unacceptable, resulting in poor audio quality with voice delays over 2 seconds.
Determining IP address: If your destination point does not know their IP address, have them go to a PC and (1)
Open Web Browser, (2) type into address bar <http://www.whatismyip.com/> and the IP address will appear within
seconds.

Voice Quality Notes - PSTN versus VoIP:

With a suitable low latency, VoIP audio quality on telephone calls are several levels better than PSTN (legacy/analogue)
calls. VoIP passes audio frequencies from 50 hertz to a peak response near 4 kilohertz. The PSTN/legacy system begins the
voice response at 340 hertz and ends at 3.4 kilohertz (3,400 hertz). Of course if any portion of the call circuit goes through
PSTN/legacy, the audio response of the circuit ends up being 340-3,400 hertz (weakest link scenario).

Voice Over Internet Basic

VoIP transfers data through IP packets, using special hardware and software or a PC environment. ISDN proved that voices (sound) could be recreated digitally, turning sounds into digital packets. Analogue sounds cannot be compressed (made shorter than they really are in real time) without degradation. Sounds (voice) converted to digital can be compressed into much shorter elements simply because most voice communication is in 'spurts' with as much or more 'silence' interspersed with the real content as the sound itself. One thing digital can do is identify the silent periods, eliminate these periods (even as short as 1/1000th of a second) and if this is done constantly and consistently, greatly shorten (compress) the actual 'digital packet length'.

Digital packets, you speaking, can be routed from your location to another, over any of several hundred thousand fibre/satellite/POTS pathways. Moreover, VoIP can have a route change in the middle of a spoken syllable; "He" travels from you to a distant point through Adelaide, "llo" ends up travelling through Auckland; "hello." By full-time monitoring the available routes from you-to-there, the VoIP packet management system is constantly searching for a free route; "free" being the operative word here.

VoIP requires a "gateway" or route management element. Gateways are traffic directors, constantly analysing the available telephone connection pathways available and switching you as traffic loads world-wide vary. VoIP telephone calls, even videophone calls, are often FREE; no charge, because your gateway provider is searching for under or non-utilised (at that instant in time) circuits to which it has a contractual user agreement. As long as the gateway can locate such circuits, your user agreement says your calls will be FREE.

VoIP dates back to 1973 (ARPANET). Installation of VoIP involves an adapter (the TelePhoSee is such a device) or a stand alone designed-for-VoIP "box". A location depending totally on VoIP requires a UPS (non-interruptible power supply) to keep the system in operation in the event of a power cut (standard POTS continue to function because they provide their own circuit power). VoIP is a constantly evolving technology, possibly two-three years shy of something approaching full maturity. SIP phones are an example - designed specifically for VoIP, with built-in network endpoint routing, voice and Email capabilities - the future is nearly unlimited.

customers for this system will typically be more affluent than average subscribers to Sky NZ/Foxtel/Austar. If completing 2 to 3 TVRO (television - receive only) new installs a day is your speed, expect one GTSA/iPSTAR per day. And you will charge accordingly (the range of install rates hovers in the A\$500 and up region for labour content for iPSTAR, \$100 for the TelePhoSee). IpSTAR installers currently work, in Australia, for approved service providers (Australian Private

Networks, Excitel are two of these). GTSA installers work directly with that firm or independently as either "Alliance Partners" (distributors) or installing dealers.

The TelePhoSee instrument, whether connected to an iPSTAR terminal or a pre-existing broadband wired network, works like any other phone - "always on", 24/7. It, truly, becomes "the" telephone instrument for a home or business and IP-PBX is a part of what they also do.

Abbreviated lesson in VoIP/ Part Two

Video Codecs: The amount of bandwidth required to carry video and voice over an IP network is largely dependent upon the following two factors:

(1) **Voice Codec** (coder/decoder) and sample period

(2) Video Codec, video **resolution**, video **quality** and IP phone **bandwidth** setting

Codec H.261 (also known as P*64) where P is an integer number to represent multiples of 64kbit/second. This was designed primarily for 'talking heads' video conferencing applications largely for use over ISDN circuits. The encoding algorithms similar to (but incompatible with) MPEG. 2.61 requires significantly less CPU (power) for real time encoding than MPEG, and includes a mechanism to optimise bandwidth by trading overall picture quality (resolution) against motion, allowing a quickly changing picture but at a lower quality than a static image.

2.61, then, is a constant-bit-rate encoding algorithm rather than constant-quality, variable-bit-rate encoding.

Codec H.263 differs from 2.61 by assigning parameters to improve overall quality and error recovery. The primary difference between 2.61 and 2.63 is half of the pixel precision is used for motion compensation (in 2.63) whereas 2.61 uses the full pixel precision (and a loop filter). Additionally, in 2.63 some segments of the data stream are optional to the user-designer, allowing the Codec to be configured for a lower data rate, or, better error recovery. This allows four optional-to-use performance enhancements: (1) Unrestricted motion vectors, (2) Syntax-based arithmetic coding, (3) Advance prediction, and, (4) Forward and backward frame prediction similar to MPEG, called P-B frames.

Using H2.63, a designer can elect any one or more resolution levels: (1) Maximum speed, (2) Fast speed, (3) Normal speed, (4) Good image, and, (5) Best image.

TelePhoSee's videophone allows the user to select any of six different net speeds: (1) 64 kbps, (2) 128 kbps, (3) 192 kbps, (4) 256 kbps, (5) 384 kbps, and, (6) 512 kbps. 512 kbps, for example, allows four simultaneous calls (a conference video call) while 256up/512 down allows two simultaneous video calls, based upon H2.63, 'normal video quality' setting and the Internet connection not being shared (ie. other simultaneous users at your connection).

SatFACTS tests indicated the 256/256 kbps setting and "normal" video (all menu driven-selected) were optimum for the in-built CCD camera video. External video wanted to see a higher connection speed (384/384 was mostly best) and our experience without respect to the actual outboard video source was that 512 kbps was never best.

Getting into the GTSA TelePhoSee Loop

Focus one: The GTSA service is not limited to iPSTAR. Any xDSL or high speed Internet connection (above 128>512; 128 up, 256 down) will suffice for video and/or voice calling. Installations involving iPSTAR involve a direct relationship between the installer/technician and the satellite provider. But you can sell videophone through GTSA without an iPSTAR relationship as long as the customer's xDSL line meets the basic broadband criteria (128/512).

Focus two: You can be an installing dealer, or a distributor (called an "Alliance Partner"). A dealer handles one box at a time, a distributor stocks the product and services dealers. An Alliance Partner also participates in additional revenue streams: Call points and a monthly user fee.

Focus three: Basic equipment required: Laptop. Basic knowledge: PPPoE, Fixed IP, DHCP.

Focus four: A dealer has two revenue streams: (1) mark-up (profit) on the videophone (A\$888 list price), and, (2) installation fee (\$50-\$100).

Focus five: A typical TelePhoSee install requires 15-30 minutes time (plus of course travel time); units arrive out of the box pre-configured in DHCP and with an assigned "virtual phone number." When the phone is connected and turned on, it registers itself with the server automatically. At that point, it is ready to use.

Focus six: Additional equipment? If the customer's pre-existing modem does not have a RJ45 port and are USB only, a low-cost replacement ADSL2 modem such as Linksys AG241 will be required; something else for the installing dealer to provide (and earn additional profit). Note: TelePhoSee is a stand-alone device - users do not require a PC.

Focus seven: TelePhoSee units can be paid for using a credit card, or, Flexirent monthly payments (A\$52 x 24 months). Flexirent requires approval of the financing firm.

Focus eight: Expanded service through GTSA. A DID number can be assigned to essentially anyone world-wide allowing distant points to use PSTN to initiate calls to a GTSA VoIP phone. This means a US destination PSTN has a 'local call' to virtually any (VoIP) world destination even though their end is not VoIP.

Focus nine: There are no territorial restrictions to being a dealer or Alliance Partner with GTSA. As long as xDSL 128>512 broadband is available (128 up and 256 down), videophones can be installed throughout the Pacific (New Caledonia, Tahiti, Fiji et al).

Focus ten: Beyond videophone, the GTSA package is actually a complex system with many optional or standard extras. For example, there is PSTN and Mobile calling. By prepaying a 'calling card' the user gets extremely low rate direct calls throughout the world by using TelePhoSee as a regular phone (you dial 0011 or 002 followed by country code and normal number).

WAVELENGTH

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TOPFIELD

TF4000Fi / FTA
TF5000CI/ Common interface
TF3000CIPpro
TF3200IR
TF4000PVR / 40 Gb hard drive
TF5010PVR / 80 Gb hard drive

MTI LNBF

Single Universal Ku	AP8-XT2
LO 11.3 Ku	AP8-T2J
Prime focus Ku	AP8-TWF

- 2/4GHz A/V sender
- Sat-Finder (SF-95)
- Angle Level Meter (A100, A300)
- Switches /DiSEqC 2x1, 4x1, 13/17V, 0/12V, 0/22 kHz
- Mesh Antennas (PSL, Dynasat) 2.1, 2.4, 3 and 3.7m
- Solid Antennas / 65, 75, 90, 120, 150, 280, 240cm
- Cables / RG-6, RG-11; 100m, 305m

No. 60 Kakit Bukit, Place #04-14, Eunostech Park,
Singapore 415979 Phone# +65-6846-3236,
Fax +65-6741-0626 Email sales@wavelength.com.sg
Website www.satellite.com.sg

What it costs and what users receive

Base cost: A\$888 includes GST; A\$29.95 per month
1/ Personal Virtual Phone Number, 2/ Free-unlimited VoIP to VoIP video calling, 3/ free-unlimited VoIP to VoIP telephone calling, 4/ Low cost PSTN and mobile calling world-wide, 5/ Free voice mail, 6/ V-mail (voice and Email messages routed to your Email address), 7/ Hands free voice and video calling, 8/ Caller ID with name, 9/ Block caller ID, 10/ Call waiting, 11/ Call return, 12/ Call barring, 13/ Speed dialling, 14/ Speed re-dialling, 15/ Video privacy (video mute), 16/ Audio mute, 17/ Unconditional call forwarding, 18/ Block anonymous calls, 19/ No answer call forwarding, 20/ Busy call forwarding, 21/ Video phone book (up to 999 names-numbers), 22/ High quality in-built video camera, 23/ High quality 4" LCD video screen, 24/ Video/audio output (RCA) sockets, 25/ Video/audio input (RCA) sockets, 26/ Onboard QoS PC port, 27/ Various ring-tones, 28/ RS232C data port for external camera motorised control (security camera applications - adjust camera views, settings from a distant point), 29/ Access to future video content (coming on line late 2006 with no copyright problems), 30/ Voice and video calling even behind NAT, 31/ Access to the BILLING WEB INTERFACE to check your account CDR 24/7.
Other options: Video and audio message recording including video 'answering machine' capability allowing caller to leave an audio or video message.
Contact: info@myfreetalk.com

Optus Targets 'Gold Cards' with new smartcard issue

Optus 'Tune 156E' channel, colour bars with text (C1, T3/12.407V, Sr 30.000, 2/3), began rolling an 11 page announcement on January 23rd, subject being the Aurora smartcard. Records indicate Optus has not changed the master-key code for Aurora in a number of years (nearly five). When Foxtel / Austar pretty much solved their own 'goldcard' problem by converting to Irdeto 2 encryption (and adding NTL for Foxtel channels), the original Irdeto 1 services making up the Aurora package were not changed. Subsequently, Irdeto 2 was added as a parallel stream for Aurora and newer cards reflect this upgraded change.

The actual planned change is not clear from what follows. If it involves changing the master-key, a sizeable percentage of the 'goldcard' universe will not notice. Others, with code-key-entry capabilities, will resume operation when the new master-key is entered.

Of course there may be something far more complex than changing the master-key and short of that detail leaking before the event, it will simply have to await implementation. Optus could be planning to eliminate the Irdeto 1 addressing stream, for example. The full set of Optus provided instruction/advisory follows:

Optus Aurora Tuning Channel

Optus C1 Satellite at 156E
Audio Tone @ -14 dBfs/1 kHz stereo
For Remote Area Broadcast Services
Tx Alignment refer to
Radio Channel 21

page 1 of 11

Will the Changes on Optus Aurora Affect You?

The Optus Aurora System
will be changing soon.

Will this affect your service? Keep watching for more
information

page 2 of 11

Aurora Platform Changes

You need to have an **OFFICIAL Optus
Smartcard** to receive channels from
Optus Aurora.

Optus will soon be making changes on
the Optus Aurora platform that may
affect reception by any **UNOFFICIAL**
smartcards or equivalent.

page 3 of 11

Do you have an **OFFICIAL**
Optus Smartcard?

The system changes are unlikely
to affect these cards:

(six different cards illustrated)

page 4 of 11

UN-OFFICIAL cards may result in service loss.

These cards are **NOT OFFICIAL** Optus Smartcards.

They may cause loss to your
service after the system changes.

(Two illustrations; a goldcard and a printed circuit board with
two ICs; shades of Mad Max!)

page 5 of 11

Information on the back of the Optus **OFFICIAL** smartcards

The **OFFICIAL** Optus Smartcards have one of the
following information on the back.

- ▶ If found please return card to: Optus Satellite Facility,
P.O. Box 235, Frenchs Forest NSW 1640
- ▶ This card is valuable. If found please return: P.O. Box
1, North Sydney 2059
- ▶ Property of Optus Vision. Return in decoder.

page 6 of 11

Optus Vision Smartcards

A small number of
Optus Vision Smartcards
may be affected by the
changes.

Please call Optus to confirm that your Optus
Vision smartcard will continue to function.
1 300 301 681

page 7 of 11

In Case of Problems . . .

Contact your Equipment Supplier.

If you do not have an
OFFICIAL Optus Smartcard
or

If you experience any
service difficulties.

page 8 of 11

Optus Aurora Smartcard Distributors

- Nationwide Antenna Systems (07)3252 2947
- Hills Antenna and TV Systems (02)9717 5271
- Sciteq (08)9409 6677
- Jonsa Elies (Aust) (02)9648 1132
- Phoenix Technology Group (03)9553 3399

page 9 of 11

Optus Aurora Smartcard Distributors

- Laceys.TV (03) 9776 9222
- Aardvark Electronics (07)4955 5879
 - Bushlink (02)6230 9400
- Strong Technologies (03)9482 3100
 - Videosat (02)9482 3100
 - Comsys (02) 9774 7476

page 10 of 11

Optus Aurora Information

For more information, visit
www.optus.com.au/AuroraNews

page 11 of 11

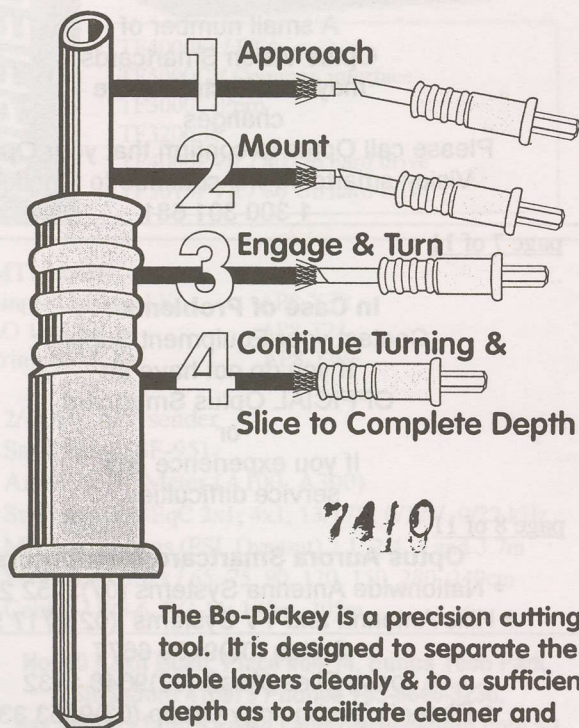
Setting aside the writer/creator's apparent lack of familiarity with English language punctuation and word capitalisation, the message is unlikely to be seen by the majority of those people with Aurora reception (how often do normal viewers bother to check the 'Aurora Tune Channel'?) Like, it is nominally a 'test card' and setting aside hobbyist experimenters, has no relevancy in normal viewing. Perhaps if they dropped in moving video excerpts from the Foxtel/Austar Adult Channel from time to time, FTA of course, people would develop a "tune-in-habit" for "The Tuning Channel."

However, at some point these 11 pages will be amended to include specific implementation dates for the new software. So it might be a good habit on your part to occasionally check C1's T3/12.407V (Sr 30.000, 2/3) to see if this important but currently missing information is provided.



3924 Chantilly Road
Chantilly, Virginia 20151
www.bo-dickey.com

703-968-9098 • Fax: 703-378-8429 • Mobile: 703-608-9061

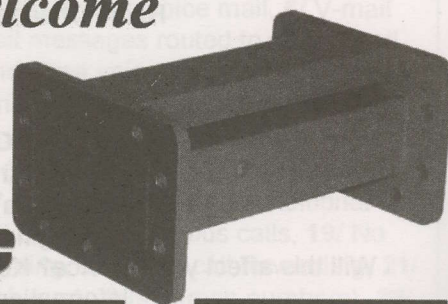


The Bo-Dickey is a precision cutting tool. It is designed to separate the cable layers cleanly & to a sufficient depth as to facilitate cleaner and easier installation of the connector.

Satellite Interference Filters

*Eliminate
out-of-band
interference at your
C-band
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Available for all
international bands.*

*Distributor
Inquiries
Welcome*



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COMPANY, INC.**

Tel 315-438-4700

FAX: 315-463-1467

E-Mail: mfcsales@microwavefilter.com

Web:

<http://www.microwavefilter.com>

SatFACTS Pacific/Asian MPEG-2 Digital Watch: 15 FEB, 2006

Bird	Service	RF/IF &Polarity	# Program Channels	FEC	Msym
Thom3/78.5	SkyChAust	3695/1455H	up to 3	3/4	5(000)
	ANT Greece	3672/1478H	1 TV	3/4	13(333)
	TARBS ME mux	3640/1510H	12TV, 12 radio	2/3	28(066)
	Ch Nepal	3626/1524V	1	3/4	15(556)
	Mahar mux	3600/1550H	11TV, 1 rad	3/4	26(667)
	RR Sat mux	3551/1600H	8TV, 10 radio	3/4	13(333)
	TVK Cambodia	3448/1702H	1TV	1/2	6(312)
	IARBS/Th5	3480/1670H	12 TV+radio	2/3	26(667)
	Thal Global	3425/1725V	up to 7?	2/3	27(500)
	ETV mux	4005/1145V	6+ TV	3/4	27(000)
InSat 2E/83	Hyd Dig 2E	3910/1240V	1	3/4	5(000)
	Kairali TV	3699/1451V	1	3/4	3(184)
	Indian mux	3643/1507V	3	3/4	19(531)
	Sky Bangla	3430/1720V	1TV	3/4	6(000)
	Ant Pac (Greek)	11.104H-Australia	1 TV	3/4	2(800)
	Guangdong TV	4075/1075H	1TV + radio	3/4	6(000)
	Euro Bouq	4000/1150H	5TV, 19 radio	3/4	28(125)
	SatLink	3960/1190H	3TV	3/4	27(500)
	Reuters News	3905/1245H	1TV	3/4	4(000)
	WorldNet	3880/1270H	4+/18radio	1/2	20(400)
NSS6/95E	APT Asia	3799/1351H	1	3/4	5(632)
	Reuters/Sing.	3775/1375H	1	3/4	5(631)
	APT Asia#2	3705/1445H	1	5/6	4(166)
	Macau MUX	4148/1002V	5TV	3/4	11(850)
	Dubai MUX	4020/1430V	4+, radio	3/4	27(500)
	Russian/Israel	3832/1318V	up to 4 video	3/4	7(271)
	Trace TV	3792/1358V	1	3/4	2(400)
	BYU-TV	3767/1383V	1 + 20 audio	1/2	6(530)
	3-ch miniM1	3752/1398V	up to 3	3/4	5(640)
	Saudi TV	3660/1490V	7+/tests	3/4	27(500)
As3S/105.5E	CETV digital	3680/1470H	1+ TV	3/4	26(670)
	Zee bouquet	3700/1450V	10TV	3/4	27(500)
	Ch News Asia	3706/1444H	1TV (+)	3/4	6(000)
	Azio TV	3716/1434H	1TV (+)	3/4	7(000)
	BTV World	3725/1425V	1TV	3/4	4(450)
	TVB 8	3729/1421H	1TV	3/4	13(650)
	Zee Movies	3732/1418V	3TV	3/4	6(500)
	TV One	3739/1411V	1TV	3/4	2(8934)
	SAB TV	3743/2407V	1TV	3/4	3(300)
	Fashion TV	3747/1403V	1TV	3/4	2(625)
As3S/105.5E	AAJ-TV	3750/1400V	1TV	3/4	2(820)
	Arlang TV	3755/1395V	1	7/8	4(418)
	Now TV +	3760/1390H	up to 10TV	7/8	26(000)
	Star TV	3780/1370V	7(+)-TV	3/4	28(100)
	GXTV	3806/1344V	1TV + 3 radio	3/4	4(420)
	Shaanxi TV	3813/1337V	1TV + 2 radio	3/4	4(420)
	Anhui TV	3820/1330V	1TV + 2 radio	3/4	4(420)
	Jiangsu TV	3827/1330V	1TV + 2 radio	3/4	4(420)
	HLITV	3834/1316V	1TV	3/4	4(420)
	Star TV	3840/1310H	7(+)-TV	7/8	26(850)
As3S/105.5E	Star TV	3860/1290V	5(+)-TV	3/4	27(500)
	Arabsat MUX	3880/1270H	10+TV, 14Radio	3/4	27(500)
	Dragon TV	3886/1264V	1 TV	3/4	4(800)
	Shaandong	3895/1255V	1TV + 6 radio	3/4	6(813)
	CCTV1	3904/1246V	1TV, 1 radio	7/8	4(420)
	Jilin TV	3914/1236V	1TV + 2 radio	3/4	4(420)
	Star TV	3920/1230H	4+ TV	7/8	26(850)
	CNN	3960/1190H	8TV, 1 radio	3/4	27(500)
	StarTV	3980/1170V	6+TV	3/4	28(100)
	Star TV	4000/1150H	8(+)-TV	7/8	26(850)
As3S/105.5E	Sahara digital	4020/1130V	8TV, 1 radio	3/4	27(250)
	Hubei TV	4035/1115H	1TV + 2 radio	3/4	4(420)
	Tianjin TV	4046/1104V	1TV + 2 radio	3/4	5(950)
	Shenyan TV	4051/1099H	1TV + 1 radio	3/4	4(420)
	Qinghai TV	4067/1083H	1TV + 2 radio	3/4	4(420)
	Hunan TV	4082/1068H	1TV + 1 radio	3/4	4(420)
	Fashion/HK-Asia	4088/1062H	1TV	3/4	2(626)
	Pakistani TV	4091/1059V	4TV, 1 radio	3/4	13(333)
	Sun TV	4095/1055H	1	3/4	5(554)
	PTV National	4106/1044V	1TV, 1 radio	3/4	3(333)
As3S/105.5E	TVB8 Mux	4111/1040H	4 TV	3/4	13(650)
	Indus News	4115/1035V	1	3/4	3(331)
	CCTV bqt	4129/1021H	4 TV, 4 radio	3/4	13(240)
	Zee Bqt #2	4140/1010V	8(+)-TV	3/4	27(500)
	Henan TV	4166/984V	1TV + 8 radio	3/4	4(420)
	Fujian TV	4180/970V	1TV + 2 radio	3/4	4(420)
	Jiangxi TV	4187/963V	1TV + 2 radio	3/4	4(420)
	Liaoning TV	4194/956V	1TV + 2 radio	3/4	4(420)
	Indovision (S-band)	2.535, 2.565, 2.595, 2.625, 2.655	33(+)-TV	7/8	20(000)
	IndoBqt	3460/1690H	up to 6	3/4	28(000)
T-Kom/108E	IPI	4185/965V	1	3/4	6(700)
	IVE Asia-Africa	4160/990H	1	3/4	5(632)
	Anteve	4144/1006V	1	3/4	6(510)
	Kabelvision Mux	4080/1070H	7+ TV	7/8	28(125)
	Indostar	4074/1076V	1	3/4	6(500)
	Satelindo	3935/1215H	1	3/4	6(700)
	Bali TV	3926/1224H	1	3/4	4(208)
	Indo MUX	3880/1270H	3+ TV	7/8	28(121)

Receivers and Errata

CA (#1, 3); FTA audio #2
Late July 04: room for more (FTA)
CA + 23FTA(AITV, IRB3, Vision Norge, Pakistan)
New 03/03; FTA
Thai + Indian services; FTA inc. Vibe TV, Sindh TV
3TV, Sradio inc. Hellas TV Greece FTA
FTA
3FTA: TV5, VTV4, ATN Bangla
FTA (reaches SE Australia)
Several ETV now here, wide beam
SCPC, OK E. Aust. wide beam
SCPC, OK E. Aust wide beam
corrections 12/02
New - November 2002
(still) FTA 11-04; was 11.083H
July 04: FTA
FTA TV + radio; closing down mid-Jan 2006
Real Madrid (V769, A770) English FTA
Was 3923H; sometimes FTA
FTA; multiple audio services V2360, A2320
Sometimes FTA; also 3895Vt
FTA & CA
FTA and CA - NASA reports included
5 chs TV, FTA, some tests
FTA; Dubai Sports Ch some English, soccer-
Two Israel, two Russians - test
new here Dec 2004; Euro-French music videos
Increased coverage; great variety audio chs(03-05)
Sun-TV, Surya TV, KTV (FTA)
FTA MCPC; Yemen, MBC EUROsport tests
replaces analogue same freq; V33, A32
Now SECA 2 CA (10-04); Radio Aust. Eng. A2011
English + V1160, A1120, 525, 625 versions
Was parallel to 3640Hz analogue (now gone)

Conax CA, all Hindi films
Also reported 3.333, 4 October 2005
SAB may no longer here here; moved to NSS-6?
new frequency October 2005
New April 2005; English, urdu
FTA SCPC; New PIDs V3601, A3606 June 2003
CA + FTA; Euro bouquet moving here (late 2005)
NDS CA (Pace DVS211, Zenith)
Guangxi TV; was As2
Was As2
Was As2
Was As2
Was As2; HeiLong
NDS CA (Pace DVS211, Zenith)
NDS CA (Pace DVS211, Zenith)
New April 2004: link to Optus B3 Globecast
Shanghai
Apparently Mongolia

Star Sports Asia (+), FTA NTSC; V514, A670 (10-04)
PowVu CA; new SR Apr 29; CNN radio FTA
NDS CA: Star News India FTA VPID 514, APID 648
NDS CA w/ 4(Chinese) FTA
New Sr September 2004
Was As2
new December 2004
Was As2
Was As2
Was As2
New July 2005
new Sr, channels, Nov 2003
"History Channel" - SCPC, some English

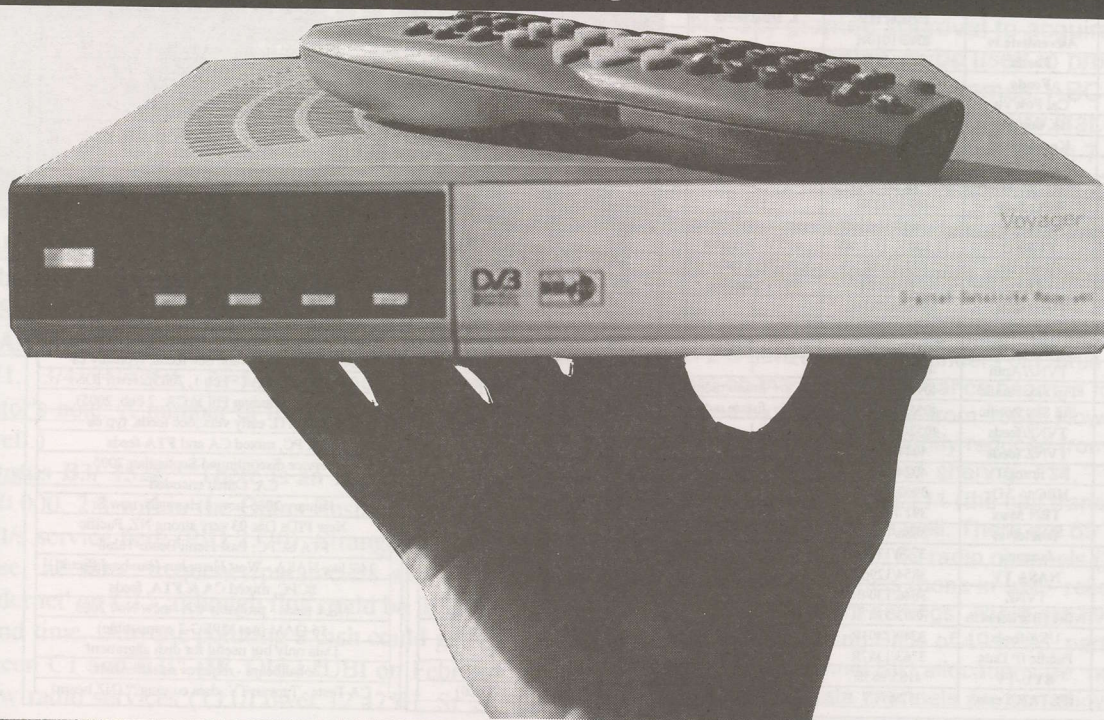
MATV Ch Movies now Irdeto 1
Hindi (+ "Plus"); day parts
moved from 4115
Now SECA 2 CA (10-04); 1 occ. FTA (varies)
Was As2
Was As2
Was As2
Was As2
NDS CA using RCA/Thomson,
Pace IRDs; 2.535 has 2 FTA
also 3586H/17.500, 3496H/19.615
FTA SCPC; NT/NC only
New August 2003
change from 4055V; FTA SCPC
also try 3500H, 27.000, 3/4, strong NZ
FTA (new 06-03); V2201, A2202
test card - only - reported
FTA, may not be active full time
FTA; Sr change 01/03; erratic

Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym
	Brunei/Sing	3733/1417H	1TV	3/4	6(,000)
	SCTV	3726/1424V	1TV	3/4	6(,620)
	RCTI	3473/1677H	2	3/4	8(,000)
As4/122E	CCTV internal	4100/1050V	6	3/4	27(,500)
Jc3/128	Miracle Net	3996/1154V	3 up to 6	5/6	22(,000)
	Asian bqt	3960/1190V	up to 8	7/8	30(,000)
Ap6/134E	Multiple	4140/1010V	up to 8	7/8	27(,500)
T18/138	Tests	3460/1690V	8	3/4	30(,000)
	LTV Laos	3804/1346V	1		
Am3/140	STS +	3731/1419R	1	3/4	3(,200)
Jc2A/154	BYU-TV	3915/1245V	1+ 20 languages	3/4	4(,166) (?)
MeasSs2	Astro Mux	11.602H	up to 17TV	3/4	41(,500)
	VTV MUX	11.522V	3 TV	3/4	9(,766)
B3/152	AuroraBiz	12.407V	4 TV, 10 radio	2/3	30(,000)
	UBI/tests	12.425V	up to 13 TV + radio	3/4	22(,500)
	GlobeCast 2	12.525V	13 TV, 8 radio	2/3	30(,000)
	GlobeCast (feeds)	12.550-555V	1TV	3/4 & 2/3	6(,110/670)
	GlobeCast	12.564V/T13	2+ TV	2/3	30(,000)
	UBI/tests	12.613H/T14L	11+TV	3/4	22(,500)
	UBI/tests	12.640H/T14U	11+TV	3/4	22(,500)
	GlobeCast 1	12.658V/T7	14TV, 15 radio	2/3	30(,000)
	UBI/tests	12.674H/T15L	11+TV	3/4	22(,500)
	UBI/tests	12.701H/T15U	11+TV	3/4	22(,500)
	WA ABC	12.702V	1 TV, 1 radio	7/8	14(,288)
	WA SBS	12.720V	4TV, 2 radio	5/6	12(,600)
	WA GWN/WIN	12.738V	2TV	7/8	14(,295)
C1/156E	Internet tests	12.288V/T1L	no regular TV	1/2 - ?	28(,650) (?)
	Aurora	12.324V/T1U			
	Pay TV	12.365V/T2	11TV, 2 radio	3/4	27(,800)
	Aurora Home	12.407V/T3	5 TV, 13 radio	2/3	30(,000)
	Pay-TV	12.447V/T4	5TV, 4 data	3/4	27(,800)
	Pay TV	12.487V/T5	3+ TV, data	3/4	27(,800)
	Aurora 2	12.527V/T6	7TV, 20 radio	3/4	30(,000)
	Pay-TV	12.567V/T7	10 TV	3/4	27(,800)
	Pay-TV	12.607V/T8	10 TV	3/4	27(,800)
	Pay-TV	12.647V/T9	10 TV	3/4	27(,800)
	Pay-TV	12.692V/T10L	6TV, 27 radio	1/2	28(,650)
	Aurora MUX	12.728V/T10U	4TV, 17 radio	1/2	24(,450)
	Austar	12.305H/T11	6TV, 24 data	3/4	30(,000)
	Pay-TV	12.358H/T12	10 TV	3/4	27(,800)
	Pay-TV	12.398H/T13	10 TV	3/4	27(,800)
	Pay-TV	12.438H/T14	6TV, 3 data	3/4	27(,800)
	Pay-TV	12.478H/T15	10 TV	3/4	27(,800)
	Pay-TV	12.518H/T16	10 TV	3/4	27(,800)
	Pay-TV	12.558H/T17	10 TV	3/4	27(,800)
	Pay TV	12.598H/T18	10 TV	3/4	27(,800)
	Pay-TV	12.638H/T19	10TV, 30 radio	3/4	27(,800)
	Pay TV	12.688H/T20	11TV	3/4	27(,800)
B1/160	7 Central DTV	12.365H	1TV	3/4	5(,100)
	Occ. feeds	12.380H	1 TV - *	3/4	6(,111)
	Occ. feeds	12.384V	1 TV - *	3/4	6(,111)
	Net 7 service	12.397H	1	3/4	7(,200)
	Imparja mx	12.379H	2TV + 8 radio	3/4	5(,424)
	7 digital feeds	12.397H	1TV	3/4	7(,200)
	Feeds to NZ	12.411V	1 TV	3/4	6(,111)
	SBS Mux	12.420H	3+ TV, 2+ radio	5/6	12(,600)
	TVNZ DTH	12.456V	5+TV	3/4	22(,500)
	TVNZ Tests	12.483V	up to 11TV	3/4	22(,500)
	Sky NZ	12.519/546V	7TV/7TV	3/4	22(,500)
	Sky NZ	12.581/608V	6TV/6TV	3/4	22(,500)
	Sky NZ	12.644/671V	9TV	3/4	22(,500)
	ABC HDTV	12.610H	5TV	7/8	14(,3288)
	Sky NZ	12.707/734V	8+TV	3/4	22(,500)
P8/166E	ABS-CBN	12.575H	4+TV, 4+ radio	2/3	13(,845)
	JEDI/TVB	12.686H	11+ TV	3/4	28(,126)
	ABC A-P	4180/970H	2TV, 2 radio	3/4	27(,500)
	Disney Pac	4140/1010H	typ 6 TV	5/6	28(,125)
	Taiwanese MUX	4080/1070H	12+ TV	5/6	30(,000)
	NHK Joho	4060/1090H	7TV, 1 radio	3/4	26(,470)
	FOX Mux	4040/1110V	up to 5TV	7/8	26(,470)
	NET +	4121/1029V	1 TV	3/4	4(,774)
	ESPN USA	4020/1130H	8+TV, data	3/4	26(,470)
	Discovery	3980/1170H	8 typ.	3/4	27(,690)
	CalBqt/Pas8	3940/1210H	up to 3+ FTA	7/8	27(,690)
	CNBC HK	3900/1250H	up to 7TV	3/4	27(,500)
	FilipinoMUX	3880/1270V	up to 8TV+radio	5/6	28(,694)
	TaiwanBqt	3860/1290H	12TV + 30 r	5/6	28(,000)
	CCTV Mux	3829/1321H	up to 4+ 1 radio	3/4	13(,240)
	TVBS-N	3836/1314V	1FTA, 4+ CA	3/4	22(,000)
	EMTV PNG	3808/1342V	1 + 2 radio	3/4	5(,632)
	CNNI	3780/1370H	3, up to 5 TV	3/4	25(,000)
	Discovery Asia	3764/1386V	Up to 6 TV	3/4	19(,850)
	MTV	3740/1410H	8	2/3	27(,500)
P2/169E	WA Mux Pv	12.281V	3+ TV, radio	2/3	27(,500)
	Arjang TV	12.401V	1TV	3/4	4(,400)
	ABS-CBN	12.575H	4TV, 2 radio	2/3	13(,845)
	Test mux	12.715H	6+ TV	2/3	30(,000)
	TARBS feeds	4090V/1060V	9TV + radio	3/4	21(,000)
	BBC SCPC	3986/1164H	1TV	1/2	5(,700)

Receivers and Errata

FTA ; Singapore 23hrs, Brunei 1 hr, Brunei V1200 was on 4048V; New Caledonia, parts of Australia FTA SCPC; Australia, New Caledonia, some Eng. Irdo 2; 4060V HDTV CA; also try 4020V PowerVu; some FTA (Ch. 1 & 3) CA & FTA NTSC; Japan, Taiwan (ApStar 6: also 4180V same #s; analogue also) also try 3660/3540V, Sr 30,000, 3/4; some FTA VPID 512, APID 4112 North beam; also try 3875R, 12.475, 1/2 Strong NZ & Australia; may now be 1/2, 6.525 Aust East beam - 3 FTA + 14 CA WA only? Skew path, intended Asia differs from 12.407 CI; tune ch FTA; NZ+Au T11/lower testing late May 2005 NZ + Au, FTA Mcript CA occ feeds, NZ + Au; recently 12.553V AMTV, Healing only FTA svcs now here High performance beam; not NZ; new PIDS 10-05 High performance beam; not NZ; new PIDS 10-05 NZ + Au (Mcript, PowVu capable) High performance beam; not NZ; new PIDS 10-05 High performance beam; not NZ; new PIDS 10-05 ABC WA tests, FTA SBS, radio tests WA FTA Irdo V2 CA, tests (GWN, WIN) Now on Australia + NZ beam; SCPCs not currently in use Tests; SBS-NDS CA, others FTA when here NZ (90cm) + Australia (Only C1 svc left on NZ) Australia NA only (leakage to Norfolk, New Cal) Australia NA only (leakage); 9-Net x 3 widescreen Arrow radio (still here), tone FTA Pay-per-view movies; CA Pay-per-view movies; CA Pay-per-view movies; CA ABC for Foxtel/Austar; previously 12.288V changes September 2005 Austar inter; Expo FTA NDS CA + Mcript; CA CA, subscriptions available Australia, Norfolk Sky News active; 'Help x 2' FTA CA, subscriptions avail Au, Nrlk, TVSN FTA CA, subscriptions available Australia, Norfolk "Home" CA, subscription available Australia, Nrlk CA, subscriptions available Australia, Norfolk CA, subscription available Australia, Norfolk CA, subscription available Australia, Norfolk Central beam; Freq change 08-05 * - plus 12.451H, 12.460H * - plus 12.293V, 12.402V, 12.411V Full schedule less commercials - links; may be CA PIDs vary; also try 12.360, 12.370 occ. digital feeds; typ fla Often NTSC; USA-Australia-NZ Also 12.437H, 12.456H same params; HDTV+WS FTA 7 channels (TVNZ x 4); +Maori_DW, CCTV9 Testing late June; 16:9 added late July NDS CA, subscription available NZ NDS CA, subscription available NZ NDS CA, subscription available NZ also see 12.626, 643, 670, 688, & 706H NDS CA, subscriptions available NZ June 2002-Irdo-2 CA Dateline west; also east PAS2, 3901V PowVu CA Tests - CA service announced PowVu CA & FTA; subscription available was PAS-2, previously 3992V; feeds FTA NET25 + FTA; new PIDS April '03; reload PowVu CA; ch 11 DCP-CCP bootload; audio FTA PowVu/CA (some audio FTA) PowVu CA & FTA (EWIN + CBS + IBN +) NDS CA (6 channels); one test card occ FTA Myx FTA V1960, A1920 + radio (CA) Mixed FTA & CA; STC gone (CA) PowVu FTA, replaces PAS-2 svc Difficult because of CCTV cross pole PowVu CA PowerVu; some audio FTA PowerVu; Asian MUX; new parameters Nov '03 # 8 MTV China FTA V289, A290; rest CA PowVu CA, WIN, ABC NT, SBS; status unknown Test - may not stay permanently Temp FTA; subs Aust 011-800-2270-0722 initially with 6 NTSC colour bars Occ FTA (Chile +); BIG power reduction Nov 03 BBC World moved here January 2005

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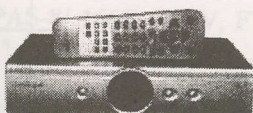
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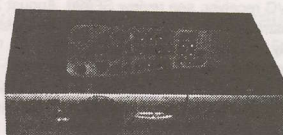
DSR-192



Compact Digital **Satellite** receiver with Scarts, SPDIF Optical out, Modulator, Diseqc1.2 and loop through connection.

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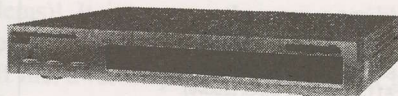
DSR-807



Compact Digital **Satellite** receiver with UCAS slot, Scarts, SPDIF Optical out, Modulator, Diseqc1.2 and loop through connection

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DSR-103



FTA Compact Digital **Satellite** Receiver With Modulator & SPDIF Coaxial output Diseqc1.2 and loop through connection.

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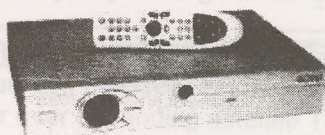
DTR-279



FTA Compact Digital **Terrestrial** Receiver SD Standard Definition Digital Terrestrial Receiver with Philips tuner, modulator, Wide Hot Key, Teletext & Logical Channel

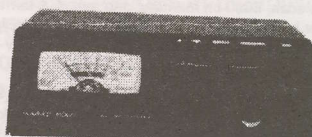
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ODS4000IR



Digital **Satellite** Receiver with one embedded Irdeto Smart card slot With Modulator & SPDIF Coaxial output, Diseqc1.2 and loop through connection.

Marco Polo basic Satellite finder



Satellite finder with inbuilt rechargeable battery, Signal level meter, tone, 13/18V output and 22KHz output.

Wavelength Australia site is at <http://www.wavelength-australia.com>

Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym
(PAS2/169E)	Adventists.tv	4040/1010H	1	2/3	5(900)
	Feeds	3868/1182H	1	2/3	6(620)
	Feeds	3939/1211H	2 (typ NTSC)	2/3	6(620)/7(498)
	Cal PowVu	3901/1249H	up to 8	3/4	30(800)
	HK bouquet	3850/1300H	up to 8	2/3	24(900)
	Korean Bgt	3771/1379H	1	3/4	6(510)
1804/174E	iPSTAR	12.619H	1	2/3	25(220)
	Tests-NZ beam	12.646H	1	3/4	22(418)
	RFO Poly	4027/1123R	1TV	3/4	4(566)
1701/180E	TNTV	11.060&11.514V	9	3/4	30(000)
	TVRFO	11.136V, 11.174V	6+TV, 3+ radio	3/4	23(149)
	Canal+Sat	11.610H	16TV, 1 radio	3/4	30(000)
	PBS	12.648HH	16TV possible	3/4	28(066)
	TVNZ/BBC	4186/964RHC	1	3/4	5(632)
	TVNZ	4178/972RHC	1	3/4	5(632)
	AFRTS DTS	4175/975L	3 TV, 3 radio	2/3	3(680)
	TVNZ/Aptn	4170/980RHC	1	3/4	5(632)
	Fiji Sky Pacific	4095/1055LHC	6TV + future radio	3/4	16(505)
	Fiji Sky Pacific	4055/1095LHC	6TV + future radio	3/4	16(505)
	TVNZ/feeds	4052/1098RHC	1	3/4	5(632)
	TVNZ feeds	4044/1106R	1	3/4	5(632)
	NZ Prime TV	4024/1126L	1	2/3	6(876)
	NBC to 7 Oz	3960/1190R	1	7/8	6(447)
	TBN Mux	3927/1223R	4TV	2/3	11(394)
	WorldNet	3886/1264R	1TV, 37 radio	3/4	25(000)
	Ioarana	3772/1378L	1	3/4	4(566)
	NASA TV	3854/1296R	1 TV	3/4	2(000)
	TVNZ	3846/1304R	1	3/4	5(632)
	NBA (Barker) Ch	3803/1347R	1	3/4	6(111)
	USA feeds	3749/1401R	4?	?	26(400)
NSS-5/177W	Pacific IP Data	3763/1387R	none-data	3/4	27.5
	BYUL-TV	4185/965R	1TV, 20+ audio	1/2	6(525)
	iPSTAR Tests	12.691V	8 TV	5/6	17(600)

Receivers and Errata
New December 2003; 24/7 "Hope Chs."
FTA (occ sport); also try 3863, Sr6.100
FTA-typ NTSC-occ sport, live Shuttle
PowVu CA + FTA (includes BBC-W 05-05)
was 4148Vt; some FTA
Korean MUX, reload 12-04; new Sr
Tests, late May start; also 12.646H
Testing possible data links; June 2003
SE spot beam; was 4027LHC
east spot; 10TV + r each, vertical pol.
FTA 11.136 Tahitian beam, 11.174 west beam; 12/04
1+ FTA, MediaGd "2"; + 10.975 weaker
Testing Fiji region pay-TV (MDS) package (Oct '04)
DMV/NTL early vers. occ feeds, typ ca
DMV/NTL early vers., occ feeds, typ ca
DTS Direct to Sailors; audio previously FTA - gone
DMV/NTL early vers. occ feeds, typically ca
Nagravision CA (> Feb 1, 2005) New PIDS
All now (including Fiji 1) CA; 7 Feb, 2005)
DMV/NTL early vers. occ feeds, typ ca
SCPC, mixed CA and FTA feeds
Service discontinued September 2005
CA, Latch encoded
January 2006-now 4 channels, new Sr
New PIDS Dec 03 very strong NZ, Pacific
FTA SCPC; East Hemi Beam-Tahiti
24/7 live NASA - West Hemi bm (can be difficult!)
SCPC, mixed CA & FTA, feeds
NBA feeds - probably CA - new Nov 2003
16-QAM (not MPEG-2 compatible)
Data only but useful for dish alignment
Global beam - requires sizeable dish
CA Tests - Taiwan TV: data coming?? (NZ beam)

MPEG-2 DVB Receivers: (Data here believed accurate; we assume no responsibility for correctness!)

AV-COMM R3100. FTA, excellent sensitivity (review SF May 1998); new version Sept. '99. AV-COMM P/L, 61-2-9939-4377.

AV-COMM Tiny Tot. FTA, 12Vdc operated, palm sized, low power consumption; review SF#120. Contact # above.

Coship 3188C. Review SF#107. Blind search FTA rcvr; works well. Phoenix Technology Group (www.phoenixsatellite.com.au) (Irdeto 2 as well as FTA versions)

Divitone: "Left-handed" review SF#115; does "code key" entry. Available <http://www.satmax.ws>

eMTECH eM-100B (FTA), eM-200B (FTA + Cb2), eM210B (FTA + 2xCI + positioner); KanSat 61-7-5484 6246 (review SF#89)

Fortec Star Lifetime. Two versions, both blind search, code-key programmable, one X 2 CI. Review SF#119. www.aDigitalLife.com

Humax ICR1 5400 (Z). Embedded Irdeto + 2 CAM slots; initial units had NTSC glitch, now fixed. Widely available; new software avail 04-04, SF#76.

Humax IRC1 5410 (Z). Adaptable version capable of holding multi-CA systems (SF#98, 99). Widely available; original importer Sciteq (www.sciteq.com.au).

Hyundai-TV/COM. HSS100B/G (Pacific), HSS-100C (China) FTA. Different software versions; 2.26/2.27 good performers, 3.11 and those with Nokia tuners also good, later 5.0 not good.

Hyundai HSS700. FTA, PowerVu, SCPC/MCPC. Review SF March 1999. Kristal Electronics, 61-7-4788-8902.

Hyundai HSS800CI. FTA, Irdeto (with CAM) + other CA systems, PowerVu, NTSC. Kristal Electronics, above; review SF#63.

INNOVIA IDS3088. Review SF#111. Blind search FTA receiver. High quality IRD; available Phoenix Technology Group, and Satmax (<http://www.satmax.ws>).

ID Digital CI-24 Sensor. New August 2003; new lower noise tuner, extra sensitivity; CI Interface slot Irdeto 1 & 2; review SF#109. Sciteq 61-8-9409-6677.

KSF-570 FTA digital receiver, import; KSC-570 adds CI x 2 (no test or user results available). Asoft Limited, 64-4-234-1096

KSC-N550H2 'Premium Dual DVR' digital receiver (no test or user results available). Asoft Limited, 64-4-234-1096

MediaStar D7.5. New (May 00) single chip FTA; review June 00 SF. MediaStar Comm. Int. 61-2-9618-5777

MediaStar D10. FTA and Irdeto embedded CA. VG receiver; see review SF#96, August 2002. Contacts immediately above.

MultiChoice (UEC) 660. Essentially same as Australian 660, not grey market contrary to reports. Sciteq tel 61-8-9306-3738

Nokia "d-box" (V1.7X). European, FTA, may only be German language, capable of Dr. Overflow software. SF#95, p. 14.

Nokia 9200/9500. When equipped with proper software, does Aurora, originally did pay-TV services provided software has been "patched" with "Sandra" or similar program. See SF#95, p. 14, SF#96 p. 15. SatWorld 61-3-9773-9270 (www.satworld.com.au)

Pace DGT400/DVR500. Originally Galaxy (Now Foxtel+Austar). Irdeto, some FTA with difficulty (Foxtel Australia 1300-360818). UECs replaced.

Pace "Worldbox" (DSR-620 in NZ). Non-DVB compliant NDS CA including Sky NZ, no FTA; similar "Zenith" version (see SF#115, p. 15).

Phoenix 111, 222, 333 models (no longer produced); Service, backup - Phoenix Technology Group 61-3-9553-3399; www.phoenixsatellite.com.au

Pioneer TS4. Mediaguard CA (no FTA), embedded Msym, FEC, only for Canal+Satellite (AntenneCal ++687-43.81.56)

PowerVu (D9223, 9225, 9234). Non-DVB compliant MPEG-2 unless loaded with software through ESPN Boot Loader (see below). Primarily sold for proprietary CA (NHK, CMT etc). For service only - call Scientific Atlanta 61-2-9452-3388. For revision model D9850, see Scientific Atlanta (below).

PowTek. Blind Search Chinese sourced, field tests rate it highly. Source jason@adigitalife.com

Prosat 2102S. FTA SCPC/MCPC, NTSC/PAL, SCART + RCA. Sciteq 61-8-9306-3738.

SatCruiser DSR-101. FTA SCPC/MCPC, PowVu, NTSC/PAL. (Skyvision Australia 61-3-9888-7491, Telsat 64-6-356-2749); no longer available.)

SatCruiser DSR-201P. FTA SCPC/MCPC, PowVu, NTSC/PAL, analogue, positioner - (Skyvision - see above); no longer available.

SATWORK ST3618. Blind search FTA receiver. Fast search, problems, especially in "memory-filing" system; review SF#111. Available DMSi at tim@dmsiusa.com

SATWORK ST3688. Blind search, 3000+ ch memory, multi-format RF modulator; improved version 3618. Review SF#113; available DMSi (above).

Scientific Atlanta D9223, D9234, D9225; Orig. PowerVu, superceded Dec 2003 by D9850. Commercial receiver, available TVO 61-2-9281-4481, John Martin

Strong Technologies SRT2620. SCPC, MCPC FTA, exc sensitivity, ease use, programming. Review SF#91 (ph. below).

Strong SRT 4600. SCPC, MCPC, PowerVu; exc graphics, ease of use, review SF#64. Strong Technologies 61-3-8795-7990.

Strong 4800. SCPC, MCPC, embedded Irdeto+ CAM slots, does code-key with additional software, Aurora. Strong Technologies 61-3-8795-7990.

Strong 4800 II. SCPC, MCPC CAM slots x 2 for Aurora +, Zee, Canal +, code key with additional software. Strong Technologies (above); review SF#103.

Strong 4890. SCPC, MCPC, 30Gb PVR, 2 CAM slots, DiSEqC 1.0, 1.2 (review SF#84), does code key with additional software; Strong Technologies, # above.

UEC Atlas/Titan (1000). New July 2003, replacing DGT400 for Austar. No SCART, L-band loop; also available Rural Electronics 61-2-6361-3636.

UEC642. Designed for Aurora (Irdeto), approved by Optus; w/new software, C-band FTA; faulty P/S. Norsat 61-8-9451-8300.

UEC660. Upgraded UEC642, used by Sky Racing Aust, Foxtel, limited FTA. (Nationwide - 61-7-3252-2947); P/S problems.

UEC700/720. Single chip Irdeto built-in design for Foxtel; unfriendly for FTA. Power supply problems, seldom sold to consumers; propensity to fall off back of trucks.

Voyager. Two models (08-05); one FTA auto scan, 6000 ch memory; one multi-CA format CAM. Satlinknz.co.nz

Winersat DigiBox 200. C + Ku basic receiver but includes Teletext for NZ TVOne, 2 VBI. Satlink NZ, fax 64-9-814-9447; long term teletext problems (loses TT).

"X" Digital. When modified with "aftermarket" Internet software, does Aurora and other V-1 CA without card; review SF#119. Strong Technologies (61-3-8795-7990).

Accessories:

Aurora smart cards. MCRYPT (Irdeto V2) cards now available (Jan 2005), Sciteq 61-8-9409-6677.

PowerVu Software Upgrade: PAS-8, 4020/1130Hz, Sr 26.470, 3/4; pgm ch 11 and follow instructions (do not leave early!)

PowerVu (Pacific) repair service: Cable & Sat Svcs, Darius West, 61-2-9792-1421 (Email darius@cases.net.au)

WITH THE OBSERVERS

AMC 23/ 172E: "This new bird should be at 172E (C and Ku bands) before you read these words; reports encouraged!" (C. Sutton, NZ)

AsiaSat 2/ 100.5E: "Israeli Network, FTA, 3832V, Sr 7.271, 3/4 (V=260, A=516); comes and goes." (David) (Editor's note: A number of Russian channels have been here as well.)

Optus B3/ 152E: "There is an ISP data feed on 12.407V, Sr 30.000, 2.3 within the Optus Business group. There is a 3 MBit/s service here (PID 2320). Strangely, Optus has chosen to use the same frequency/parameters and PID as used for 'Bordernet' on C1 - although this could be in fact Bordernet, a second time. Anyone pointing a dish could get very confused between C1 and B3!" (IF, Qld.) "UBI on February 7th added 3 new radio services (T11/Lower 12.425H, Sr 22.500, 3/4) - previously no radio here. They are: SID156: R156 (FTA, possibly Russian, A=667); SID158: NTC (FTA at A=669), a country music station which has been on Globecast's T5. The UBI audio runs just over a minute 'behind' the Globecast version. The third is on 12.701H/T15Upper, Sr 22.500, 3/4 with SID114: A=661 (CA). It has an ident of '2ME'. (AI, Victoria) "SBS (2 TV, 2 radio) FTA 12.719V, Sr12.600, 5/6." (Zapara, WA)

Optus C1/ 156E: "Foxtel has changed their channel label on T19/12.638H (Sr 27.800, 3/4) for 'ACT'; now it is simply 'AURORA'. Could that be confusing???" (IF, Qld.)

PAS-2/ 169E: "TVNZ has a news feed around 5PM NZST, 4044H, Sr 4.000, possibly to Fiji TV and others in Pacific." (Bruce)

PAS-8/ 166E: "FTV, FTV News FTA 3991V, Sr 13.300, 3/4." (B. Richards, SA)

Thaicom 3/ 78.5E: "3569H, Sr12.500, 3/4 MRTV, MRTV3, 5-sports, 5-movies and radio." (B. Richards, SA)

Soapbox: "Smartcards for ABC Australia encrypted Rugby matches arrived here in PNG." (GW) "I am blaming internet for pay-TV piracy (as well as many more world-wide problems)! It is apparently now possible to pirate virtually any pay-TV system in the world using a pair of d-boxes and a PC. If me, a technophobe, can work out how to do this, those who have an interest (I do not!) in piracy should now number in the hundreds of thousands. Somehow, I cannot feel 'sorry' for Dreambox and their chip-acquisition problems." (Mark L, Sydney) (Editor's comment: It might be unfair to 'blame Internet' for piracy although in 2006 it is surely a major tool

AT PRESS DEADLINE

NZ Sky granted approval to acquire NZ Prime TV (UHF terrestrial), to be used to promote Sky and carry delayed sport games. ABC A&P Rugby Super 14 schedules <http://www.jsat.tv/super14.swf>. Southern Cross Ten replaces 7-Central B1 12.365H, Sr 5.100, 3/4 FTA.

UBI/Boulos Updates as of February 6, 2006

UBI (United Broadcasting International) presently transmits on 2.5 horizontal transponders of Optus B3 at 152E. These are on the high-performance beam, a footprint previously used by Foxtel/Austar from 156E. However, transponder signal levels are slightly reduced from Foxtel/Austar's earlier use because of sharing. T14, T15 each carry two UBI MCPCs while T11 (the half transponder) carries occasional feeds as well. There are 65 TV channels total (61 currently in use), 60 radio channels (25 currently in use) and 25 data channels (none in use - relics from the original TARBS equipment settings. There are five data channels on each MCPC, using SIDs of 49 to 53, partially explaining the gap in TV channel SID allocations (ie. none from 48 to 54).

Unless the data channels are somehow related to UBI's unique encryption system, it remains 'odd' that they have not been eliminated from 'the inventory'. Whenever UBI broadcasts a channel list, Spanish TVE appears as "TVE (FTA)". This is inaccurate although TVE was FTA for a few months, it has been CA for a long time. One of the broadcasters on UBI's Community TV channel (SCTV), 'LankaVision' (Sri Lanka) in a text graphic promotes, "LankaVision broadcasts throughout Australia and New Zealand", which is of course also inaccurate (there is no NZ coverage for UBI).

UBI/12.674H/T15Lower/Sr 22.500, 3/4, TS ID 1 (TV - all CA): **SID1:** ANA (Arabic Network of Australia), V=576, A=896; **SID2:** INFY (Infinity TV/Arabic), V=577, A=897; **SID3:** NEWT (NewTV/Arabic), V=578, A=898; **SID4:** MWER (Al Mehwar/Arabic), V=579, A=899; **SID5:** ALYM (Al Yawm/Arabic), V=580, A=900; **SID6:** MSLT (Arabic Series Channel/ Al Mousalsalat), V=581, A=901; **SID7:** NDM (Nile Drama/Arabic), V=582, A=902; **SID8:** NVAR (Nile Variety), V=583, A=903; **SID9:** NNEW (Nile News/Arabic), V=584, A=904; **SID10:** CIN1 (Cinema 1/Arabic), V=585, A=905; **SID11:** ROTC (Rotana Cinema/Arabic), V=586, A=906; **SID45:** RTPi (RTP International/Portuguese), V=587, A=907; **SID55:** AFN (American Farsi Network/Persian), V=588, A=908.

(Radio - all CA): **SID102:** ELQ (El-Quran/Arabic), A=660; **SID103:** V.O.I. (Voice is Islam/Arabic), A=662; **SID104:** R104 (not in use), A=663; **SID105:** ALB (unknown use), A=664; **SID106:** SOUT (Voice of Arab/Sout Al Arab), A=665; **SID107:** (not in use - R107), A=666; **SID108:** (not in use - R108), A=667; **SID109:** (RLL, Radio Leban Lehre/Arabic), A=668.

(UBI/continues page 29, 30)

WITH THE OBSERVERS: Reports of new programmers, changes in established programming sources are encouraged from readers throughout the Pacific and Asian regions. Information shared here is an important tool in our ever expanding satellite TV universe. **Photos of yourself, your equipment** or off-air photos taken from your TV screen are **welcomed**. TV screen photos: If PAL or SECAM, set camera to f3.5-f5 at 1/15th second with ASA 100 film; for NTSC, change shutter speed to 1/30th. Use no flash, set camera on tripod or hold steady. Alternately submit any VHS speed, format reception directly to SatFACTS and we will photograph for you.

Deadline for March 15th issue: March 4th by mail or 5PM NZST March 5th if by fax to 64-9-406-1083 or Email

5 metre US Maspro revival in American Samoa

In 1985, the USS Maspro 5m fiberglass antenna was the choice for thousands of commercial users throughout North America. Antenna test range verifications said it was the best of the best. So when Oakland, California's

Tim Alderman found a "slightly used" (once for a downlink experiment) stored model, he grabbed it for his 'boneyard'. Then to Bill Hyman in American Samoa (SF September & October 2004) with Bill hopeful it would outperform his Kiwi built and designed 7m aluminium frame mesh antenna. It was not to be.

Hyman, with considerable effort (that began with getting it shipped from Oakland to Pago Pago), cleared the top of his channel 11 TV station transmitter building (see photo) and recreated the 2,000 pound antenna plus mount there.

Hyman's 7m Kiwisat antenna(s) provide full lock on a variety of PAS-8, PAS-2 and I701 services - all of which are important to his local low power TV station operation, carried by local Pago Pago cable. The 5m 'super antenna' was lower in gain by an all-important 1 dB plus. Hyman next laboriously glued an aluminium foil to the full surface of the 5m dish, hoping to improve the gain. It changed the focal point by 1 inch (from 76 to 75") but no more gain. None at all over the original antenna. Alderman notes, "I had never assembled or proofed the antenna before agreeing to ship it to American Samoa."

In fact, Hyman believes, "The dish was decommissioned for a reason. It is not a good design for long term longevity (now being approximately 20 years from manufacture). In comparison, my smaller Prodelin dish has two metal pieces at the top to prevent sagging over time; USS did not do this. I have one more thing to try - a cable at the centre of each pedestal to form a triangle and tension it to (try to) bring the petals 'in'." Alderman adds, "I have had two USS Maspro dishes in my hands. One was for the musician Steve Miller ('Steve Miller Band') for his home in Coeur d'Alene (Idaho). The backplate on this one was warped and we only discovered this after using a crane to install the dish. This was in 1992, and the factory did nothing to help us with the 'warpage issue'." Indeed - live and learn. Even the Rolls Royce folks produced lemons.

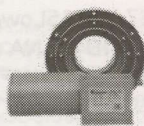


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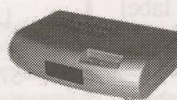
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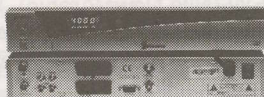
POSITIONER



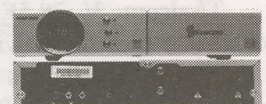
ACTUATOR



FTA RECEIVER



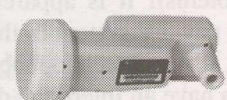
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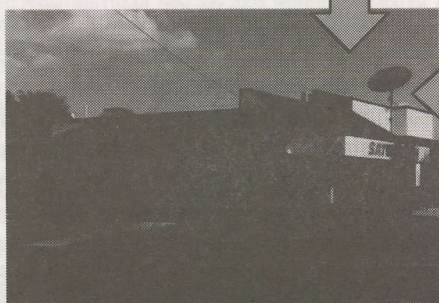
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UBI/12.674H/T15 Lower - continued from page 27

SID110: (not in use - R110), A=669; **SID111:** ELQN (El-Quran El Karim), A=671; **SID112:** (not in use - R112)

UBI/12.701H/T15 Upper/Sr 22.500, 3/4 TSID 2

(TV - all CA. Note - the signal on this MCPC is inverted!)

SID12: ROTZ (Rotana Zaman/Arabic), V=576, A=896;
SID13: ESC1 (Al Nasriyah/Arabic), V=577, A=897; **SID14:** TVS (Syria Satellite/Arabic), V=578, A=898; **SID15:** JSC (Jordan Satellite Channel/Arabic), V=579, A=899; **SID16:** TLSH (TeleLiban & Al Shasha/Arabic), V=580, A=900;
SID17: ROTT (Rotana Tarab/Arabic), V=581, A=901; **SID18:** ROTM (Rotana Music/Arabic), V=582, A=902; **SID19:** SAT7 (Christian religious/Arabic), V=583, A=903; **SID20:** ALMJ (Al Majd/Arabic), V=584, A=904; **SID21:** HEYA ((Heya TV/Arabic), V=585, A=905; **SID22:** SHRQ (Al Sharajya/Arabic), V=586, A=906; **SID46:** SIC (SIC International/Portuguese), V=587, A=907; **SID56:** TASH (Tapersh/Persian from USA).
(Radio - all CA): **SID114** (not in use - R114), A=661); **SID115:** TRTR (TRT Radio/Turkish), A=662; **SID116:** BCFM (Burc FM/Turkish) A=663; **SID117:** ISFM (Istanbul FM/Turkish), A=664; **SID118:** RADD (Radyo D/Turkish), A=665; **SID119:** BTFM (Best FM/Turkish), A=666; **SID120:** SRFM (Super FM/Turkish), A=667; **SID121:** KRAL (Kral FM/Turkish); **SID122:** (not in use - R122), A=669; **SID123:** (not in use - R123), A=671; **SID124:** ALEM (unknown use), A=672.

UBI/12.613H/T14 Lower/Sr 22.500, 3/4, TSID 3

(TV - includes 1 FTA) **SID23:** IRQY (Al Iraqya/Arabic), V=576, A=896; **SID24:** ATV (Ankara TV/Turkish), V=577, A=897; **SID25:** VZYN (Kanal 7 & Vizyon Turkish Community TV), V=578, A=898; **SID26:** SHOW (Show TV/Turkish),

SID28: LIG (Futbol/Turkish), V=581, A=901; **SID29:** PTRK (Power Turk Music TV), V=582, A=902; **SID30:** STV (STV/Turkish), V=583, A=903; **SID31:** TRTI (Turkish-FTA, also on Globecast T7), V=584, A=904; **SID32:** KDTV (Kanal D/Turkish), V=585, A=905; **SID33:** SINT (Sinema Turk), V=586, A=906; **SID47:** TVGL (TV Global, Portuguese-Brazil), V=587, A=907; **SID57:** JAMJ (Jame Jam, IRIB3/Iran), V=588, A=908.

(Radio - all CA): **SID125:** ALFM (Alpha FM/Greek), A=660; **SID126:** THES (Radio Thessalonikj/Greek), A=661; **SID127:** PEFM (Peraiki Ekkisia FM/Greek), A=662; **SID128:** ATNA (Athena 98.4/Greek), A=663; **SID129:** FERA (Stara FM/Greek), A=664; **SID130:** CITY (City Radio/Balkan), A=665; **SID131:** ROSA (Radio Rosa/Balkan), A=666; **SID132:** VIKM (Vikom FM/Balkan), A=667; **SID133:** MRT (MRT/Balkan), A=668; **SID134:** (not in use - R134), A=669; **SID135:** (not in use - R135), A=670; **SID136:** RAUS (Radio Austral/Spanish), A=671.

UBI/12.640H/T14 Upper/Sr 22.500, 3/4, TSID 4

(TV - includes 3 FTA) **SID34:** TNOV (TL Novelas/ Latino), V=512, A=640; **SID35:** RITL (Ritmoson Latino/Spanish), V=513/A=641; **SID36:** COLM (TV Columbia/Apsnish), V=514, A=642; **SID37:** PELI (De Pelicula/Spanish), V=515, A=643; **SID38:** TVE (TVE/Spanish), V=516, A=644; **SID39:** CINL (Cinema Latino), V=517, A=645; **SID40:** TEFE (Telefe International/Argentina), V=518, A=646; **SID41:** CEST (Canal de las Estrellas/Latino), V=519, A=647; **SID42:** PLST (Polsat2/Polish - FTA), V=520, A=648; **SID43:** KTV (Kurdistan TV - FTA), V=521, A=649; **SID44:** SCTV (Satellite Community TV/Greek - FTA), V=522, A=650; **SID67:** ALPH (Alpha TV/Greek), V=523, A=651; **SID68:** MEGA (Mena Cosmos/Greek), V=524, A=652.
(Radio: 12 radio channels, SIDs 137 to 148, PIDs 660-671, only SID139 RDPR?Portuguese in use [FTA]; A=662.)

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UBI/12.425H/T11Lower/Sr 22.500, 3/4, TS ID 5

(TV - 13 including 2 FTA): **SID58**: PLAN (Planeta TV/Bulgarian-music), V=512, A=640; **SID59**: HYAT (NTV Hyat/Balkan), V=513, A=641; **SID60**: MKTV (MTB Sat/Macedonia), V=514, A=642; **SID61**: K-15 (K-15, Macedonia), V=515, A=643; **SID62**: BOM (Best of Macedonia), V=516, A=644; **SID63** (not in use/ to be Balkan), V=517, A=645; **SID64** (not in use/to be Balkan), V=518, A=646; **SID65**: SIG (Sigma/Cyprus), V=519, A=647; **SID66**: CYPS (Cyprus Sat, RIK Sat - FTA), V=519, A=647; **Note**: SID67 and 68 are located on 12.12.640H; **SID69**: MAD (Mad TV/Greek-music), V=521, A=649; **SID70**: STAR (Star TV/Greek), V=522, A=650; **SID71**: ALTG (not in use - to be AlterGlobe/Greek), V=523, A=651; **SID72**: CH72 (UBI promotional channel, FTA), V=524, A=652.

(Radio: **SID52**: R156 (FTA, possibly Rusdian, new February 7), A=667; **SID158**: NTC (FTA, country music, new February 7), A=669). **Note**: There are ten unused radio channels here, SIDs 149-155, 157, 159, 160) and A PIDs 660-666, 668, 670).

in the piracy world. As "Television's Pirates: Hiding behind your picture tube" so accurately relates, piracy of TV programming began in the early 1950s and it was in fact rampant piracy of satellite TV that drove the original growth of C-band TVRO in America during the first half of the 1980s - all prior to the arrival of Internet.) "Now they are telling us what kind of solder composition we can use (SF#137)? Good grief - what next? Banning Freon, asbestos, lead pipes??? Is there no end to this? In a recently issued 'R5 Components' pamphlet, they mention an 'EU directive that restricts the use of 6 hazardous materials' in the manufacture of various types of electronic and electrical equipment. I'm betting mercury-switches are on that list. Yet it remains OK for billions of people to press multi-watts of UHF and microwave energy against their cheekbones (the cellphone). I predict when today's teenagers reach 40+ there will be a sharp increase in bone cancer of the head. We have our priorities wrong!" (BS, NSW) "Reference Tim Alderman's 'mushroom' mounted dishes. I disagree this is a solution to anything. If the geographical location of the dish is such that the latitude requires elevation of the dish high enough to be high enough for water to lay inside the surface 'cup', the installer should at the least drill drainage holes. Having done that, only a few leaves or blowing dirt will be a constant problem plugging the drainage. And where there is heavy rains, heaven-forbid hail or snow, the dish becomes a pocket which will wipe out reception. Even the American solution to rain fades (SF#131 p. 18) would not help Alderman's 'Mushroom' (farm!) dishes." (IF, Qld.) "50 new 3.5 GHz 'base stations' are currently being installed for Hawkes Bay and Wellington by Nzwireless with an operational target date of end of March. Good luck to you!" (Chris)

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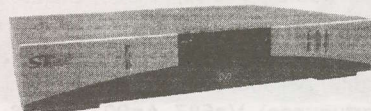
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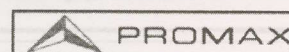
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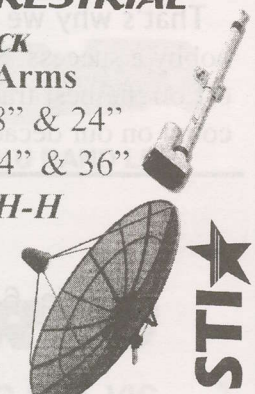
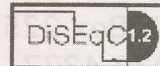
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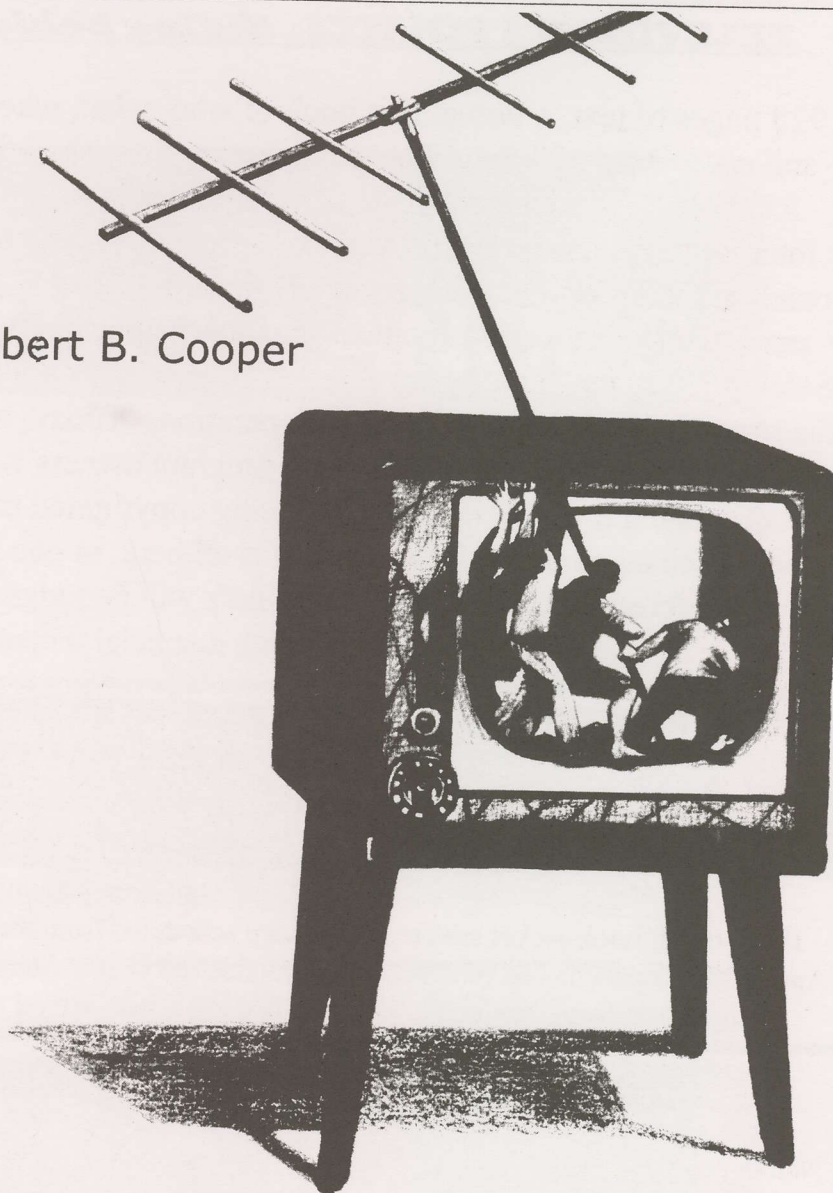
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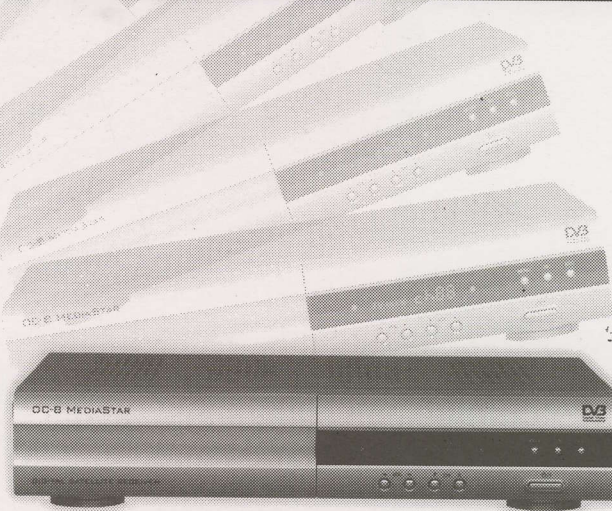
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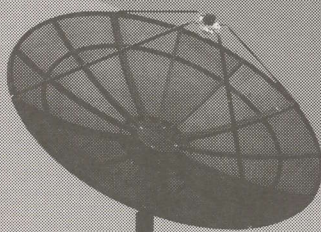
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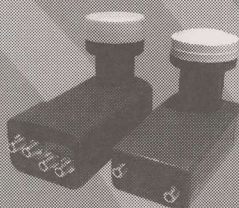


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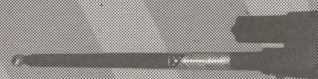


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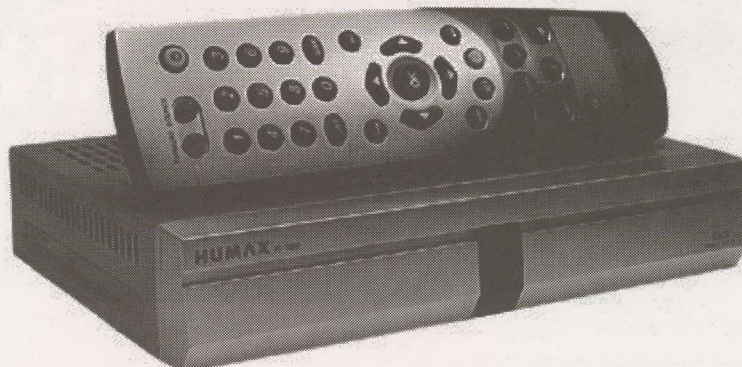
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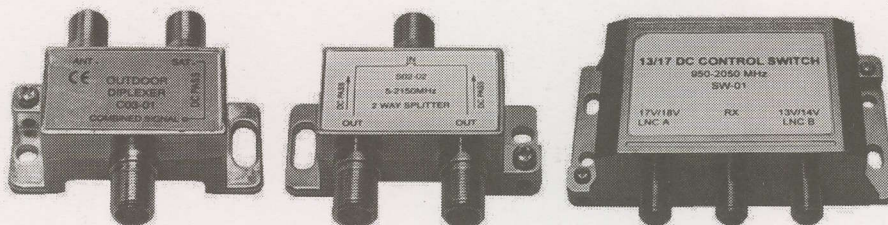
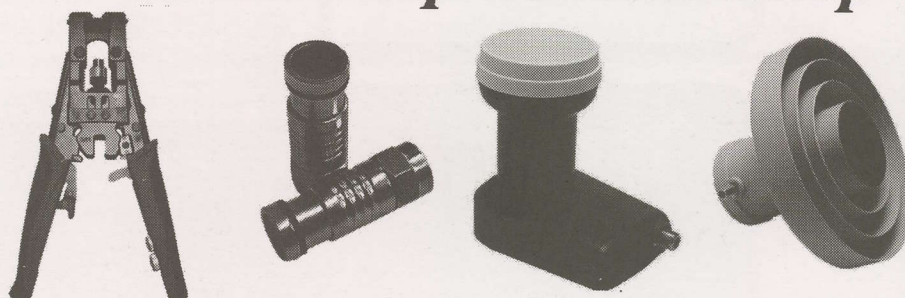
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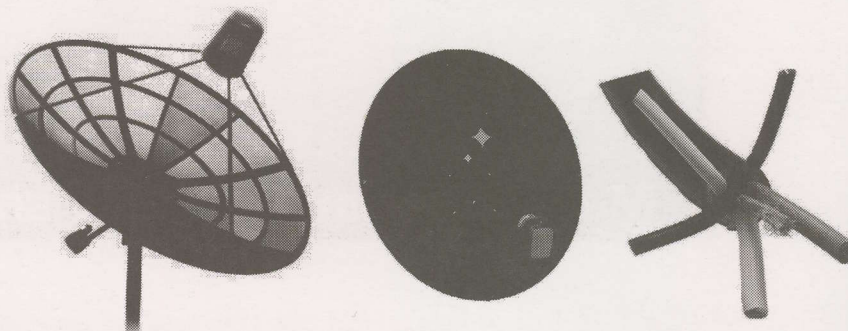
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